

EXHIBIT K

Page 1

1 UNITED STATES DISTRICT COURT

2 WESTERN DISTRICT OF NEW YORK

3 -----X

4 CAROL S. MARCELLIN, Individually, and as
5 Co-Administrator of the Estate of Charles E.
6 Hollowell, deceased, and JESSICA HOLLOWELL-McKAY,
7 as Co-Administrator of the Estate of Charles E.
8 Hollowell, Deceased,

9 Plaintiffs,

10 -against-

11 HP, INC. and STAPLES, INC.,

12 Defendants.

13 -----X

14 Civ. No: 1:21-cv-00704-JLS

15 Job No: P1-7232374

16 -----X

17 Virtual Deposition

18 April 1, 2025

10:05 a.m.

19
20
21 DEPOSITION of TIMOTHY JAMES MYERS, Ph.D., CFEI,
22 an Expert Witness, taken by the Plaintiff, pursuant
23 to Notice, held at the above-mentioned time and
24 place, before a Court Reporter and Notary Public of
25 the State of New York and New Jersey.

A P P E A R A N C E S:

FARACI LANGE, LLP
Attorneys for Plaintiffs
1882 South Winton Road - Suite 1
Rochester, New York 14618
BY: STEPHEN G. SCHWARZ, ESQ.
MATTHEW F. BELANGER, ESQ.
JOSH MANKOFF, ESQ.

SMITH, SOVIK, KENDRICK & SUGNET
Attorneys for Defendants
6245 Sheridan - Suite 218
Williamsville, New York 14221
BY: JACLYN WANEMAKER, ESQ.

ALSO PRESENT:

Marcelo Rivera - Videographer

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I N D E X

WITNESS	EXAMINATION BY	PAGE
Timothy James Myers	Mr. Schwarz	7

EXHIBITS

PLAINTIFF'S

EXHIBIT	DESCRIPTION	PAGE
1	Professional Profile of Timothy J. Myers (13 pages)	7
2	NFPA 921 Guide for Fire and Explosion Investigations - Guide 2024 (77 pages)	7
3	Evidence Collection Form (2 pages)	7
4	Expert Report of Timothy J. Myers (26 pages)	7
5	6-CELL Battery Specification For MU06062 Revision 1.3 (12 pages)	7
6	Fire Department Reports (83 pages)	7

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EXHIBITS

PLAINTIFF'S

EXHIBIT	DESCRIPTION	PAGE
7	A Study of Thermal Runaway Mechanisms in Lithium-Ion Batteries and Predictive Numerical Modeling Techniques (16 pages)	7
8	Gas Explosions and Thermal Runaways During External Heating Abuse of Commercial Lithium-Ion Graphite-LiCoO ₂ Cells at Different Levels of Ageing (12 pages)	7
9	Rebuttal Statement Prepared by Jason Karasinski, IAAI-CFI, NAFI-CFEI (17 pages)	7

REQUESTS FOR PRODUCTION

DESCRIPTION	PAGE
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F E D E R A L S T I P U L A T I O N S

IT IS HEREBY STIPULATED AND AGREED by
and between the attorneys for the
respective parties herein:

THAT the sealing, filing and
certification of the within deposition be
waived;

THAT such deposition may be signed and
sworn to before any officer authorized to
administer an oath, with the same force and
effect as if signed and sworn to before the
officer before whom said deposition is
taken.

IT IS FURTHER STIPULATED AND AGREED
that all objections, except as to form, are
reserved to the time of trial.

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1 VIDEOGRAPHER: Good morning.

2 We are going on the record at 10:05
3 a.m. on April 1st, 2025.

4 Please note that this deposition is
5 being conducted virtually. The quality of
6 recording depends on the quality of camera
7 and internet connections of participants.
8 What is seen from the witness and heard on
9 screen is what will be recorded.

10 Audio and video recording will continue
11 to take place unless all parties agree to
12 go off the record.

13 This is media unit one of the
14 video-recorded deposition of Dr. Timothy
15 Meyers in the matter of Marcellin versus
16 HP, Inc. and Staples filed in the United
17 States District Court for the District of
18 New York.

19 This deposition is being conducted
20 remotely using virtual technology. My name
21 is Marcelo Rivera representing Veritext
22 Legal Solutions, and I am the videographer.
23 The court reporter is Eva Kaflinski in
24 association with Veritext Legal Solutions.

25 I am not related to any party in this

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1 action nor am I interested in the outcome.

2 All present counsel will be on the
3 stenographic record.

4 Will the court reporter please swear in
5 the witness.

6

7 -oOo-

8

9 TIMOTHY JAMES MYERS,

10 after having first been duly sworn by a Notary
11 Public of the State of New York, was examined and
12 testified as follows:

13 BY THE COURT REPORTER:

14 Q State your name for the record.

15 A Timothy James Myers.

16 Q State your address for the record.

17 A 175 Worcester Street, Natick,
18 Massachusetts 01760.

19 (Documents and photographs were
20 pre-marked as Plaintiff's Exhibit 1
21 through Plaintiff's Exhibit 9 for
22 identification, as of this
23 date)

24 EXAMINATION BY

25 MR. SCHWARZ:

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1 Q Good morning, Dr. Meyers.

2 My name is Steve Schwarz. I am the
3 attorney for the Plaintiffs in this case. I am going
4 to be the one asking you questions today.

5 I know from the materials you presented
6 and your list of testimony that you've testified -- I
7 think 17 times in the last four years, according to
8 that sheet -- so I am sure you are familiar with the
9 process and I won't waste a lot of time with that.

10 How long have you been with Exponent?

11 A Twenty-six years.

12 Q And in that time period I assume that
13 you've testified many more times than 17?

14 A That's correct.

15 Q Okay.

16 And prior to working at Exponent, what
17 type of work did you do?

18 A Immediately prior to that I was a
19 graduate student researcher at Lawrence Berkeley
20 National Laboratory and the University of California
21 Berkeley.

22 Q So, after graduation with your PhD,
23 then you've been with Exponent ever since?

24 A That's correct.

25 Q Can you tell us what does Exponent do?

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1 What is the nature of the business?

2 A Sure. It's an engineering and
3 scientific consulting company with about a thousand
4 people in roughly twenty offices in the US and some
5 offices overseas that work in a number of different
6 technical and scientific and engineering disciplines
7 that perform consulting for a variety of different
8 types of clients.

9 Q And is it true that most of your work
10 is for industry?

11 A There is a variety of clients. A lot
12 of my clients are industrial clients, yes.

13 Q Okay.

14 And your testimony that you've given in
15 the last four years has been fairly consistently for
16 different industrial concerns?

17 A I would have to go back and look at the
18 list, but I wouldn't be surprised if most of the
19 clients were industrial companies.

20 Q Okay.

21 Now, we've marked, if you turn to
22 exhibit -- tab 16 in your notebook -- I marked as
23 Meyers Exhibit 1. That's your CV or your resume.

24 On the first page, the second to last
25 paragraph, it says:

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1 "He -- "

2 You.

3 "-- has investigated incidents
4 involving self-heating or thermal runaway
5 of chemicals and the unintentional
6 reactions of incompatible chemicals."

7 Do you see where I am reading?

8 A I do.

9 Q Can you tell us have any of those
10 investigations involved lithium-ion batteries?

11 A They have.

12 Q Okay.

13 Approximately how many times have you
14 investigated thermal runaway reactions in lithium-ion
15 batteries?

16 A So, the cases where there has been
17 allegations of that occurring, I would estimate maybe
18 five to ten times.

19 Q When you investigated the potential for
20 lithium-ion battery runaway causing fires, did you do
21 any empirical research with regard to lithium-ion
22 batteries?

23 Did you do any lab studies of
24 temperatures necessary to create thermal runaway or
25 any of that sort of evaluation?

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1 A In some cases, yeah, I've reviewed
2 testing that either Exponent or others have done on
3 that. Oftentimes when I am working on a case like
4 that, there is also an additional person that has
5 better expertise that looks at that in more detail.

6 Q Tell me about the Exponent information
7 that you've reviewed with regard to testing of
8 lithium-ion battery thermal runaway.

9 What type of testing was it?

10 A Sure. So, we've historically done
11 studies where cells were, you know, cycled or
12 operated at different times and they were tested in
13 different types of equipment whether it was an
14 accelerating rate calorimeter or what we call a
15 60-liter chamber to collect bank gases. And the
16 batteries were CT scanned before and after testing.
17 Tested at various rates of state of charge. So,
18 those are some of the studies that I am talking
19 about.

20 Q In those studies that you are talking
21 about or any of the studies, did you actually try to
22 provoke thermal runaway using external heat sources?

23 A Yes.

24 Q And do you have the data on that?

25 Have you reviewed that for the purposes

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1 of this case?

2 A I have not, no.

3 Q Are you familiar with the temperatures
4 and resident times that are necessary to put thermal
5 --

6 Let me withdraw that question.

7 Are you familiar with --

8 I know you are, but I will just ask you
9 this.

10 Are you familiar with 18650 type
11 lithium-ion batteries?

12 A I am.

13 Q And were the studies that you are
14 referring to where thermal runaway reactions were
15 provoked by external heat sources, were they
16 involving 18650 cells?

17 A Some of them have been.

18 Q Okay.

19 And with regard to those, then, are you
20 familiar with the temperatures and the resident times
21 that are required for external heat to cause thermal
22 runaway in one of those cells?

23 A That's not something I reviewed
24 specifically for this case. I don't have those
25 numbers at the top of my head. I know that's

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1 something that Dr. Horn has looked at in more detail
2 for this case.

3 Q Okay.

4 So, you are relying on Dr. Horn's
5 knowledge of the temperatures necessary for and
6 resident times for 18650 cells to go into thermal
7 runaway from fire --

8 A That's correct.

9 Q And you assume that he had done some
10 sort of research or based upon the facts of this case
11 came to the conclusion of what that heat source would
12 be required to do to put them into thermal runaway?

13 A Correct.

14 I've reviewed his report where he's had
15 discussion about --

16 He had discussions about that.

17 Q Okay.

18 And is it true, then, that you really
19 don't have any knowledge of the temperatures or
20 resident times necessary to put these types of
21 battery cells into thermal runaway from an external
22 heat source?

23 A I mean, I have knowledge of some of
24 those temperatures. It's not something that I've
25 looked at in detail for this case. You know, roughly

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1 batteries or lithium-ion cells may start going into
2 runaway at temperatures ranging from 90 degrees
3 Celsius to 200 degrees Celsius or more. But it's
4 dependent on the -- of conditions. That's something
5 that Dr. Horn has looked at in more detail for this
6 case. I don't have those numbers and the details of
7 those at my fingertips.

8 Q So, the numbers that you just recited
9 to me though, those are the internal battery
10 temperatures, is that correct, that you are talking
11 about?

12 A In some cases, yes.

13 Q Well, under what circumstances would a
14 18650 cell that is exposed to external heat of 70
15 degrees or 90 degrees go into thermal runaway?

16 Do you have any idea about that?

17 A I don't have those specific details
18 with me or, you know, I haven't reviewed that
19 recently.

20 Q Isn't it true that the numbers that you
21 provided are, whether in the literature, with regard
22 to the internal temperatures that the battery
23 components have to reach before thermal runaway
24 reactions would begin?

25 A Again, this is an area that I haven't

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1 looked at in detail for this case. And Dr. Horn will
2 be addressing.

3 Q But you did come to the opinion though
4 that an external heat source was what caused these
5 battery cells to go into thermal runaway?

6 Do you recall that?

7 A Yes.

8 Q But you are not aware of what
9 temperature would be required of that external heat
10 source or the duration of time it would have to be
11 applied before that can occur?

12 A Again, I am relying on Dr. Horn for
13 those opinions. As I said, I have general knowledge
14 that, you know, the temperature required to do some
15 of the thermal damage to the laptop that was observed
16 are above the temperatures required to cause a
17 battery to go into thermal runaway. But Dr. Horn has
18 looked at that in more detail for this case.

19 Q What is the basis of your knowledge of
20 what you just told me though?

21 That the temperature necessary to melt
22 plastic is sufficient to put a battery cell that's
23 covered in a battery casing and covered with plastic
24 coating is sufficient to cause thermal runaway in
25 those cells?

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1 MS. WANEMAKER: Objection to the form.

2 You can answer.

3 A So, again, the temperatures required to
4 melt some of the plastic that was involved in the
5 computer or part of the computer to soften it, to
6 cause it to deform, are well above the temperatures
7 that lithium-ion batteries are tested for their
8 stability and where they will go into thermal
9 runaway. But again, you know, some of that depends
10 on the various properties of the cell and that's
11 something that Dr. Horn is covering in this case.

12 Q Now, if you can turn to the next page,
13 or the next two pages of your CV, which I've marked
14 as Exhibit 1, you have a heading on the third page, I
15 think, that says, "National Fire Protection
16 Association," correct?

17 A Correct.

18 Q And you are a member of that, right?

19 A I am.

20 Q And you've served as a principal member
21 on a few different committees. One on foam, one on
22 liquified petroleum gases, as the first two. And
23 there may have been others. Actually, another on
24 combustible metals and metal dusts responsible.

25 Right?

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1 A That's correct. I am involved in a
2 number of technical committees.

3 Q And what is a principal member of a
4 technical committee?

5 What does that mean?

6 A So, an NFPA technical committee, there
7 is both -- typically there is both principal members
8 and then alternate members. The principal members is
9 the primary member for an organization and has the
10 right to vote and do other things related to, you
11 know, deciding whether edits should be made to a
12 standard or if there is requests for a technical
13 interpretation or a variety of other things where
14 members vote on various actions for the committee.

15 Q Okay.

16 Could you turn to tab 2, then, which
17 I've marked as Exhibit 2 in your binder?

18 I will represent that this is only a
19 portion of NFPA 921.

20 Are you familiar with this document
21 though?

22 A I am.

23 Q And you actually cited some sections of
24 this document in your report, correct?

25 A That's correct.

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1 Q And if you could turn to the page after
2 the cover page. As I said, this is something on the
3 order of five hundred pages so I didn't duplicate all
4 the pages.

5 But on the first page that I've got
6 after the cover page is what is called a "Technical
7 Committee on Fire Investigations," right?

8 A That's correct.

9 Q And what is the role of the Technical
10 Committee on Fire Investigations in developing 921?

11 A So, with 921 or other NFPA documents,
12 people can propose edits to the standards, or in this
13 case, a guideline. And the technical committee holds
14 meetings and votes on whether they approve or do not
15 approve of those changes to the standard.

16 Q How does one get appointed as a
17 principal member of the technical committee?

18 A You apply to the committee. Then the
19 staff weighs on. And the chair of the committee
20 makes a recommendation to the standards council as to
21 whether that person should be added to the committee
22 or not. There are other requirements. They have to
23 maintain a balance on the committee. So, there is
24 limits to what percentage of the committee can be
25 made up of different types of groups. You know, the

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1 chair and others would also review an application
2 that might include the person's resume or other
3 information.

4 Q Now, 921 is entitled a "Guide for Fire
5 and Explosion Investigations," correct?

6 A That's correct.

7 Q And what is the purpose of 921?

8 A To --

9 I think it's really two-fold. To
10 provide information --

11 I am sure in pages that aren't in here
12 there is actually a list of what the scope or purpose
13 of the standard is. But generally, I would say it's
14 two-fold. It provides information to investigators
15 about some of the phenomena of fires and explosions,
16 but it also provides a guide that can be used and
17 relied upon as a methodology to be followed in fire
18 and explosion investigation.

19 Q So, is it generally recognized as the
20 leading guideline or methodology for doing fire
21 investigations then in the field?

22 A Yeah. In the United States, yes, I
23 would say that's the case.

24 Q And have you ever served on the
25 technical committee for fire investigations that put

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1 together 921?

2 A I have not, no.

3 Q And if you notice on the first page
4 there is a listing of who are the principal
5 investigators and one of them is Mr. Karasinski who
6 has presented a report in this case, correct?

7 A That's correct.

8 Q And Mr. Karasinski's report you read,
9 correct?

10 A I did.

11 Q And would it be true, then, to be on
12 the technical committee would require someone to have
13 expertise in fire investigation?

14 MS. WANEMAKER: Objection to the form.

15 Q Or you can put anybody on?

16 A It's a good question. Yeah, there is
17 really a mixture of members on the committee. There
18 is attorneys. There is representatives from an
19 insurance company. So, there is really a diversity
20 of members on the committee. You know, I think most
21 people on the committee have some knowledge of fire
22 investigation or portions of issues involved in fire
23 investigation.

24 Q Do you think there is some people that
25 really just got on because their attorneys are

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1 insurance company people; they don't have any
2 expertise to be on the committee?

3 A I didn't say that, no.

4 Q Okay.

5 So, you would agree that people --

6 It requires expertise to be on the
7 technical committee, right?

8 A It would typically require some
9 knowledge of issues related to fire investigation.

10 Q So, on the technical committees you
11 have been appointed to, were you appointed because
12 you had technical knowledge in the fields that those
13 committees addressed?

14 A Typically, yes.

15 Q Typically or are there some committees
16 you applied to that you have no knowledge about what
17 the topic was?

18 A So, I believe on all of the committees,
19 I serve as a special expert. That means that I have
20 specialized knowledge in that area.

21 Q And Mr. Karasinski has special
22 expertise in fire investigation, correct?

23 A He is listed as a special expert, yes,
24 on the committee.

25 Q Okay.

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1 And that special expert is in fire
2 investigation?

3 A I believe so.

4 Q Now, are you a special expert in fire
5 investigation?

6 A I do have expertise in fire
7 investigation. Courts have, you know, ruled that I
8 was an expert in fire investigation. So, I would
9 consider so.

10 Q Okay.

11 And in doing in your fire
12 investigations, you apply the methodology that is set
13 forth in 921, correct?

14 A That's correct.

15 Q Dr. Myers, when did you first have any
16 involvement at all in evaluating the fire in this
17 case?

18 A Since February 2020.

19 Q In February of 2020, you were retained?

20 A I was contacted about being retained on
21 a case, yes.

22 Q And when did you actually start doing
23 any work on the case?

24 A In 2023.

25 Q What did you do between 2020 and 2023?

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1 A I was contacted in 2020 and was
2 originally scheduled to attend an inspection in early
3 February. But then the inspection got postponed to a
4 later date when I wasn't available. And so, at that
5 point, another investigator attended the inspection.
6 And I didn't really do anything specific to the case
7 after that.

8 Q So, the other investigator was another
9 investigator that was retained by HP, correct?

10 A That's correct.

11 Q And his name is Greg Gorbett, right?

12 A That's correct.

13 Q Are you familiar with Mr. Gorbett's
14 expertise?

15 A I have some familiarity with him.

16 Q Well, he is a professional fire
17 investigator, correct?

18 A I believe he is a professor at the
19 university and then also does fire investigation,
20 yeah.

21 Q And he is recognized as someone who has
22 expertise in determining both the cause of fires and
23 also the origin of fires, correct?

24 A I believe that's correct.

25 Q And is it your understanding that

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1 Mr. Gorbett also follows the NFPA 921 methodology in
2 doing his fire investigations?

3 A I don't know that I reviewed his fire
4 investigations to make that determination one way or
5 the other.

6 Q So, it was Mr. Gorbett -- and not
7 you -- that went to the scene of this fire and
8 conducted the investigation for HP, correct?

9 A That conducted the scene inspection,
10 that's correct.

11 Q All right.

12 Well, the scene inspection is an
13 important part of fire investigation, correct?

14 A That's correct.

15 Q And then, in October of 2020, the items
16 that were removed from the site for laboratory
17 inspection were inspected at FRT in Ceres, New York.

18 Are you familiar with that scenario?

19 A I am, yes.

20 Q And you didn't attend that one either?

21 A I did not.

22 Q And the materials that were retained
23 from the fire for laboratory inspection, those
24 materials have been in existence and available since
25 2020.

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1 Have you reviewed any of that physical
2 material?

3 A I reviewed, you know, documentation
4 from the inspection, photographs, x-rays; things like
5 that.

6 Q Have you reviewed the actual physical
7 materials that were removed from the fire scene that
8 were examined in the laboratory?

9 A Not in person, no.

10 Q Well, have you asked to review them in
11 person so that you could look at them instead of just
12 looking at photographs?

13 A I have not.

14 Q Now, if you would --

15 I am sorry.

16 Look at tab --

17 Oh, I'm sorry.

18 In your report, which I don't think
19 I've marked yet --

20 Oh, I'm sorry.

21 Let me go to a different exhibit.

22 There is an exhibit that I have that I want to show
23 you, I am going to put it on share screen, that I
24 don't have in your notebook and I apologize, but that
25 I am going to do that now.

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1 Can you see that document?

2 A I can.

3 Q I've marked this as Exhibit 3 for your
4 deposition.

5 This is the evidence collection form.
6 It is actually two pages. I will scroll down.

7 There are 15 physical items that were
8 removed from the home for laboratory inspection.

9 Is that your understanding?

10 A Yes.

11 Q And as a fire investigator, would you
12 agree that Mr. Gorbett was involved in the decision
13 making as to which items to remove for laboratory
14 investigation?

15 A I don't know whether he was or not.

16 Q So, you are not aware of how Mr.
17 Gorbett did his examination of the fire scene for HP?

18 MS. WANEMAKER: Object to the form.

19 You can answer.

20 A I reviewed his photographs. I reviewed
21 his 3D scan of the facility. But I don't know what
22 conversations he had with people on the scene.

23 Q Well, have you done inspections of
24 scenes?

25 A I have.

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1 Q When you do an inspection with scenes,
2 is it common that there are other fire investigation
3 inspectors that are there from various entities like
4 insurance companies?

5 A Yes.

6 Q And when you do those inspections, do
7 those investigators typically collaborate to decide
8 which items need to be removed from the scene to be
9 studied under laboratory equipment?

10 A It really depends on the inspection.

11 Q So, you are saying sometimes those
12 decisions are made unilaterally and some of the fire
13 investigators don't get a role in picking what items
14 get removed for laboratory inspection?

15 A That's correct.

16 Q And is that something that you would do
17 as a fire investigator, is not have some role in
18 choosing what items be examined for laboratory
19 inspection?

20 A I don't understand your question.

21 Q In other words, when you do fire
22 inspections, do you defer and just say "I am not
23 going to play any role in what gets looked at here.
24 I don't have any interest in what you take out to
25 look at under laboratory equipment"?

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1 A It really depends on the situation.

2 Q Okay.

3 So, there is some times that you just
4 -- you don't look at any of the materials that are
5 removed from the fire scene and you don't play any
6 role in that?

7 A That's not what I said.

8 Q Okay.

9 Well, I don't understand your answer
10 then.

11 Isn't it standard procedure for a fire
12 investigator to decide what information or what
13 materials need to be looked at in laboratories and
14 removed from the fire scene?

15 Isn't that part of 921?

16 A I am not sure I understand your
17 question.

18 Q Okay.

19 Under 921 there is a fire investigator
20 under the methodology.

21 Isn't a fire investigator supposed to
22 identify what items need to be examined under
23 laboratory equipment to make further determinations
24 on origin and cause?

25 A It really depends on the situation and

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1 who the -- who the investigator is working for. You
2 know, it's not a general answer.

3 Q So, 921 does not deal with taking
4 materials away from a fire scene for laboratory
5 investigation?

6 There is nothing in 921 about that?

7 A Is that a question?

8 Q Yeah.

9 Is that what your testimony is?

10 A No.

11 Q Does 921 say that the investigator is
12 -- should identify items from the fire scene to do
13 further investigation in a laboratory?

14 A If necessary, yes.

15 Q Okay.

16 I've marked as Exhibit 4, your report,
17 and that's under tab 17, the report in this case?

18 A Yes.

19 Q And if you turn to Appendix C?

20 Appendix C is what's entitled,
21 "Materials Reviewed."

22 You with me?

23 A I am trying to get there.

24 Okay. I am there.

25 Q Now, item 7 of the materials that you

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1 reviewed were:

2 "Scene inspection notes and photographs
3 of Greg Gorbett."

4 Did I read that correctly?

5 A That's what it says there, yes.

6 Q So, tell me about, first of all, how
7 many photographs did Mr. Gorbett provide to you of
8 his fire investigation for HP at the scene of the
9 fire in February of 2020?

10 A I don't know the exact number off the
11 top of my head. I would estimate it was, you know,
12 in the hundreds.

13 Q Okay.

14 A Then it was both individual photos as
15 well as images taken around the building with a
16 Matterport System that takes a lot of photos.

17 Q So, the Matterport was a separate item
18 that basically is a 3D photograph that you can
19 actually walk through the home and review, correct?

20 A That's correct.

21 Q And you reviewed the Matterport,
22 correct?

23 A I did.

24 Q It also says that you reviewed scene
25 inspection notes from Mr. Gorbett.

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1 Do you see that?

2 A I do see that.

3 Q Tell me about those.

4 How many pages of notes did Mr. Gorbett
5 provide to you for his fire inspection of the home
6 that he undertook for HP in February of 2020?

7 A I think that's actually a typo. I
8 don't recall reviewing notes of his.

9 Q Wait.

10 You are saying that scene inspection
11 notes is a typo?

12 Like, somebody hit the wrong key?

13 A I don't believe I reviewed his notes.

14 Q Well, it's common for fire
15 investigators to take notes, correct?

16 A Typically, yes.

17 Q If you do a fire investigation, you
18 don't rely on your memory. You would take notes for
19 what you are looking at and what you are finding.

20 Correct?

21 A It's usually a combination of taking
22 notes and taking photographs to document my
23 observations.

24 Q Right.

25 A combination of taking notes and

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1 taking photographs, correct?

2 A Correct.

3 Q In fact, the notes typically reflect
4 what the photographs are so that you can have a
5 precise description of what you are trying to take a
6 photograph of, right?

7 A Not usually, no.

8 Q And you are saying that even though you
9 wrote in the report that your reviewed Mr. Gorbett's
10 notes, you are now saying under oath that you've
11 never reviewed any notes from Mr. Gorbett?

12 A I don't believe I did. My recollection
13 could be wrong, but I don't believe I did.

14 Q Well, were you provided with notes by
15 Mr. Gorbett that you think you just didn't look at?

16 A I don't believe I was provided his
17 notes, no.

18 Q So, Mr. Gorbett was hired by HP. He is
19 a professional fire investigator. He went to the
20 scene and did the investigation that you intended to
21 do but for your schedule.

22 And you are saying the only thing that
23 you looked at were his photographs?

24 MS. WANEMAKER: Objection to form.

25 A I looked at his photographs and the

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1 Matterport that he recorded.

2 Q And the Matterport. Okay.

3 Did you talk to Mr. Gorbett and obtain
4 what his insights were from actually visiting the
5 fire scene?

6 A I did not, no.

7 Q Any reason why you didn't do that?

8 A No.

9 Q You didn't want to know what his
10 conclusions were based upon his observations?

11 A I didn't. I wouldn't want an
12 expectation by a --

13 I was doing my own independent analysis
14 based on the information that was available.

15 Q And the only information you looked at
16 were photographs and the Matterport?

17 A No.

18 I looked at a number of different
19 things. Witness statements. Deposition testimony.
20 Reports from other investigators. Reports from the
21 Allegany Fire Investigation Department. So, I looked
22 at a number of different things.

23 Q Now, the next item on your list is the:
24 "Lab inspection notes and photographs
25 of Don Galler."

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1 One of the other experts for HP in this
2 case, correct?

3 A That's correct.

4 Q So, he attended the laboratory
5 examination of the materials that were taken from the
6 residents where the fire occurred that were examined
7 in October of 2020?

8 A That's correct.

9 Q Is that another typo there that you
10 looked at his notes or do you remember looking at his
11 notes?

12 A No. I have looked at his notes.

13 Q What did you glean from his notes that
14 you used for your analysis in this case?

15 A The primary thing that I recall is some
16 documentation he had comparing components of the
17 battery to an HP battery. That's the primary thing I
18 recall from his notes. Primarily, I was looking at
19 his photographs of the different items.

20 Q And just so I am clear, are you stating
21 under oath definitively that you've never received
22 Greg Gorbett's notes; just so that we have that on
23 the record?

24 A I don't believe I did. I can double
25 check that on a break, but I don't believe I did.

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1 Q Okay.

2 I would appreciate if you would double
3 check it on a break so you can tell us definitely
4 that you never received Greg Gorbett's notes.

5 Okay?

6 A (No verbal response)

7 Q Now, at the inspection on February 27,
8 2020, in addition to Mr. Gorbett, do you know who
9 else was on the premises investigating?

10 A I'm sorry.

11 Can you repeat that?

12 Q Yeah.

13 On February 27, 2020 when you were
14 supposed to go but didn't go and Mr. Gorbett went in
15 your place to do the investigation for HP, do you
16 know who else was present during that investigation?

17 MS. WANEMAKER: Objection to form.

18 You can answer.

19 A Just to be clear, I was never scheduled
20 to go there on the 27th. I was not available those
21 dates. I was scheduled to go on an earlier date.

22 I have -- I have seen a sign-in sheet,
23 and there were a number of parties. There were
24 investigators, I think, for the insurance company.
25 There were investigators for the Hollowell family. I

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1 don't know if there were separate investigators for
2 the Marcellin family. I think there was someone from
3 Staples there. So, there were a number of different
4 investigators for a number of different parties. I
5 think also from the Allegany Fire Investigation.

6 Q And that would be Mr. Luckey, correct?

7 A Correct.

8 Q So, all --

9 So, there was Mr. Luckey. There was
10 Mr. Karasinski and Mr. Litzinger from FRT.

11 Correct?

12 A I believe that's correct.

13 Q You've read their reports and they said
14 they were there, correct?

15 A Correct.

16 Q And then, there was Mr. Gorbett for HP?

17 A Correct.

18 Q And then, there was someone from a
19 company called NEFCO Fire Investigations that was
20 there from the insurance company?

21 A I don't recall it specifically. I
22 think there was someone from an insurance company
23 there. I don't remember what company they were with.

24 Q Do you remember that the -- some of the
25 pictures you looked at from Mr. Gorbett had signs on

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1 them that referenced NEFCO Fire Investigations having
2 investigated the scene?

3 A I remember seeing some signs saying not
4 to move things and things like that. I just don't
5 remember what company name was on those.

6 Q Okay.

7 So, all of those people were on the
8 scene to investigate the fire, including Mr. Gorbett,
9 but you were not there?

10 A That's correct.

11 Q And you are saying that you have no
12 idea what went on at that investigation other than by
13 looking at the pictures?

14 MS. WANEMAKER: Form.

15 You can answer.

16 A I reviewed pictures taken by
17 Mr. Gorbett. The Matterport. I reviewed the reports
18 of other experts, Mr. Karasinski and Mr. Litzinger,
19 that were there. I've seen their photos and seen
20 their discussion of the inspection, but I wasn't
21 there personally, no.

22 Q Okay.

23 Now, with regard to this exhibit that I
24 got up --

25 And you said you had seen this before,

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1 correct?

2 A Correct.

3 Q And on this list, is it true, that
4 everything on this list, all 15 items, were removed
5 from either the office area of the home or the
6 hallway where materials from the office were placed
7 by the firefighters except for the circuit breaker?

8 MS. WANEMAKER: Steve, are you able to
9 make that any larger?

10 MR. SCHWARZ: Sure.

11 MS. WANEMAKER: I am having --
12 Thank you. That's better.

13 Q And take a moment to review it.
14 Tell me when you want to go to the next
15 page.

16 A You can go to the next page.
17 That's correct.

18 Q Do you have any knowledge of any other
19 items that were removed from the home for laboratory
20 inspection other than these 15?

21 A I am not aware of other items, no.

22 Q Do you believe that Mr. Gorbett was
23 somehow restricted in anything that he could wish to
24 look at for laboratory inspection?

25 A I don't know one way or --

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1 MS. WANEMAKER: Form.

2 You can answer.

3 A I don't know one way or the other.

4 Obviously, he would have different
5 interests than, say, your experts as well, so.

6 Q Well, do you understand that it was
7 decided by the group, including Mr. Luckey, and
8 including the NEFCO Fire investigator, Mr. Gorbett,
9 that certain items would be taken out of the home and
10 inspected at the FRT Laboratory in Ceres at a later
11 date?

12 A The only representation I've seen from
13 that is from reports by your experts.

14 Q Do you have any --

15 A I mean, I don't know whether Mr. Luckey
16 was involved. I couldn't tell you.

17 Q Well, you weren't there so you don't
18 know, right?

19 A That's correct.

20 Q And they were there and they had the
21 discussions with the other experts?

22 A I don't know.

23 MS. WANEMAKER: Form.

24 Q Well, that's what they swore under oath
25 that they did, correct?

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1 A I haven't seen Mr. Karasinski's
2 deposition so I don't know what he said or didn't say
3 under oath.

4 Q Is Mr. Gorbett still alive?

5 A As far as I know he is.

6 Q So, you could actually call him and
7 find out exactly what happened at that inspection if
8 you chose to, correct?

9 A I don't know.

10 Q You don't know if you can call him?

11 A I don't know whether he would talk to
12 me about that or not. I don't know.

13 Q Well, you were both hired by the same
14 client, right, HP?

15 A That's my understanding.

16 Q But you think that if you asked HP for
17 permission to call him, it would be denied for some
18 reason?

19 A I have no idea. I haven't asked him.

20 Q Why do you think HP wouldn't want you
21 to talk to Mr. Gorbett?

22 A I don't know whether they would or
23 whether they wouldn't.

24 Q So, you weren't interested in
25 Mr. Gorbett's observations at the scene or whether he

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1 played a role in choosing these physical evidence
2 items?

3 That wasn't anything that interested
4 you?

5 A No.

6 MS. WANEMAKER: Asked and answered.

7 Q The answer was "no," right?

8 A Correct.

9 Q Now, in addition to the items that are
10 listed --

11 First of all, in Exhibit 4, Appendix C,
12 your list of items, are there other typos where you
13 said you reviewed something where you didn't really
14 review it?

15 A I am not aware of any. I wasn't aware
16 of that until we just looked at that.

17 Q Now, in addition to the 15 items minus
18 Mr. Gorbett's notes that you now say is a typo, have
19 you reviewed anything since you wrote this report
20 about this case?

21 A I have.

22 Q What else did you review?

23 A I reviewed a declaration from
24 Ms. Marcellin. I reviewed deposition testimony from
25 Mr. Martin and Mr. Litzinger. I reviewed a

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1 rebuttable report by Mr. Karasinski and Mr. Martin.
2 I think I reviewed some materials that were
3 referenced by Mr. Martin.

4 Q Did those include literature articles?

5 A Yes.

6 Q Okay.

7 Let's turn to tab 7, which I have
8 marked as Exhibit 5. Myers Exhibit 5.

9 I will represent for the record that
10 this is the HP 6-cell battery specification that was
11 produced in discovery in this case for the Pavilion
12 Series Laptop Computers.

13 Is that your understanding?

14 A Yes.

15 Q In your list of materials, you just
16 generally listed HP production documents.

17 And I assume that means all of the
18 documents that HP produced to the Plaintiffs in this
19 case?

20 A I don't know if that's the case or not.
21 We had a group of documents that were called HP
22 production documents. I don't know if that was
23 everything that was produced to the Plaintiffs or a
24 subset of that. I don't know.

25 Q Well, how many pages of that

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1 production, whatever was in the file that you are
2 saying, was called HP production documents?

3 Approximately how many pages was it?

4 A I don't know. I would have to look on
5 a break.

6 Q That's another thing you can look at on
7 a break.

8 Would you agree that this particular
9 document, which is -- we've marked as Exhibit 5 and
10 begins with the Bates numbers HP 01378 and continues
11 through HP 01389, would be one of the documents that
12 were in that HP production documents file?

13 A I don't recall whether it was or not.

14 Q Well, have you looked at this battery
15 specification that was the specification for the
16 subject laptop battery from HP?

17 A I don't believe I have, no.

18 Q Are you familiar with what a battery
19 specification is?

20 A I do have some familiarity with that,
21 yes.

22 Q So, would it be an accurate statement
23 to say that this is a document that HP produced to
24 provide to battery manufacturers for the
25 specifications they wanted the battery pack and

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1 battery management system to meet in order to be
2 authorized to be used by the HP Pavilion?

3 MS. WANEMAKER: Objection to form.

4 You can answer.

5 I'm sorry to interrupt you.

6 A I don't know specifically. That would
7 be a better question for Dr. Horn.

8 (Whereupon, a discussion was held off
9 the record)

10 Q So, based upon your level of expertise,
11 then, you are not familiar with what a battery
12 specification for a laptop computer is generically?

13 A I am generically, but I am not --
14 I haven't looked at this document
15 before. Dr. Horn was looking into more details of
16 the battery. So, this would be a better question for
17 him.

18 Q Okay.

19 Well, I am going to ask you some
20 questions about it anyway and then you can tell me
21 that either you are familiar with it or not.

22 You said that you've done
23 investigations of lithium-ion battery thermal
24 runaway, correct?

25 A That's correct.

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1 Q So, you, then, are familiar that there
2 are certain safety devices that are intended to
3 prevent or at least limit the potential for thermal
4 runaway in lithium-ion batteries?

5 A That's correct.

6 Q And, in fact, we are going to get to
7 it, but in NFPA 921, there is a whole section that
8 talks about lithium-ion batteries, correct?

9 A That's correct.

10 Q And you cited to that section?

11 A That's correct.

12 Q And in that section it talks about
13 lithium-ion battery thermal runaway, but there are
14 certain safety devices that are standard in battery
15 management systems to try to prevent thermal runaway,
16 correct?

17 A That's correct.

18 Q So, you are familiar, then, that there
19 are industry standards for safety devices to try to
20 limit the potential for thermal runaway in
21 lithium-ion batteries in battery packs for
22 peripherals like laptops?

23 A Correct.

24 Q So, if we look at this document that
25 we've marked as Exhibit 5, you will see that there is

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1 a section for approved fuel gauges, right?

2 A That's correct.

3 Q And there is a whole series of fuel
4 gauges that are listed that are the --

5 There are microprocessors on the
6 battery management system, correct?

7 A Correct.

8 Q And there is also a requirement here in
9 this specification that there is a temperature sense
10 capability. That's 2.5.

11 A That's correct.

12 Q And you are familiar with what that
13 means, correct?

14 A Yes.

15 Q It means that there is a requirement
16 that when the battery cell gets to a certain
17 temperature that the battery management system has a
18 way of turning off any additional charge to prevent
19 overheating of the battery?

20 MS. WANEMAKER: Is that the question?

21 Q You are familiar with that, correct?

22 A Well, I think Section 2.5 just says
23 here that it has a temperature sensing capability.
24 It doesn't say what it does with that.

25 Q Well, are you familiar with what a

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1 battery management system temperature sense
2 capability would be used for?

3 A Yes.

4 Q And what is that used for?

5 A It was used to monitor the temperature
6 of the battery and so then it takes certain actions.
7 Like, whether or not to allow charge or discharge of
8 the cells. But again, this is an area that I think
9 Mr. Galler and Mr. Horn are covering in this case.

10 Q Well, thermal runaway occurs when
11 temperature of the battery cell exceeds a certain
12 temperature, correct?

13 A Correct.

14 Q And once thermal runaway begins, it
15 becomes an irreversible reaction and heat producing
16 system that eventually results in the thermal runaway
17 reaction, correct?

18 A Yeah.

19 Once you reach a certain point in
20 thermal runaway, unless you can drastically change
21 something, like, provide a lot of cooling, it's just
22 going to continue.

23 Q So, the temperature sense capability
24 that was required by HP for this battery management
25 system was intended to prevent the laptop battery

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1 cells from exceeding those temperatures that would
2 start that reaction, right?

3 MS. WANEMAKER: Objection to form.

4 You can answer.

5 A So, again, this is an area that Dr.
6 Horn is covering. But more generally, it's to keep
7 the battery operating within a certain range of
8 temperatures that are typically much lower than the
9 temperature in which you will have thermal runaway.

10 Q Right.

11 When there is an --

12 Actually, we can look if you want just
13 to help you. Take a look in this exhibit, page HP
14 01383, there is a chart that starts on the page
15 before but what I want to ask you about is number 9
16 on that chart on that page where it says, "Over-Temp
17 Protection for Charge."

18 A Uh-huh.

19 Q And in that section, the specification
20 says if the temperature exceeds 46 degrees Celsius
21 for greater than two seconds, that there is an action
22 that is taken to turn off what is called a C-FET.

23 Do you know what a C-FET is?

24 A I couldn't tell you what the acronym
25 is, but it is a switch that would allow or not allow

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1 electricity to flow.

2 Q So, the way this specification reads is
3 that a vendor that's making battery packs for this
4 Pavilion laptop has to have a safety feature that
5 once the temperature exceeds 46 degrees for two
6 seconds then the charge is turned off, correct?

7 A That's not what it says, no.

8 Q Explain to me then what that says.

9 A It says if the temperature is greater
10 than or equal to 46 degrees Celsius for greater than
11 two seconds, then turn off the C-FET, and it must
12 trip within less than five seconds.

13 Q So, by turning off the C-FET, you stop
14 the charge to the battery?

15 A That's correct.

16 Q Okay.

17 So, was it the "equal to" that you were
18 quibbling about my statement?

19 A That was one point.

20 I think there was something you read
21 that was incorrect.

22 Q Okay.

23 But the way you read it is the way HP
24 wanted the system to function?

25 A Again, I haven't looked at this

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1 document before. I am just reading what the document
2 says. I think if you want details about this, it
3 would be more appropriate to be asking Mr. Galler or
4 Dr. Horn.

5 Q Well, I think you gave an opinion that
6 the thermal runaway in this case did not occur
7 because of something that happened inside the cell.
8 It occurred because of heat that was applied outside
9 the cell.

10 Correct?

11 A That's correct.

12 Q So, is it your testimony, then, that
13 the safety devices that are intended to prevent
14 thermal runaway were not relevant to your opinion?

15 A I didn't say that. As I've said a
16 number of times, Dr. Horn is covering the more
17 specific battery issues. I related this and I am
18 relying on his work as well.

19 Q So, your opinion as to the cause of
20 thermal runaway in this battery pack is entirely
21 reliant on Dr. Horn's opinions?

22 A You make a lot of statements.

23 Is that a question or just a statement?

24 Q That's a question. Put a question mark
25 after my statement and you can answer it or you can

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1 say that you can't answer it.

2 A No, what you said is not correct.

3 Q So, what is your state of knowledge,
4 then, of the importance of safety devices in
5 preventing thermal runaway in a battery cell that is
6 being charged?

7 A So, the controls are designed to keep
8 the batteries operating in a safe state, in a safe
9 range of perimeter space whether it is temperature,
10 voltage, a variety of conditions. So, those help
11 maintain the quality of the battery. It helps
12 prevent deterioration of the battery. Factors that
13 can, you know, eventually contribute to thermal
14 runaway. But the temperatures we are talking about
15 here, 45 degrees Celsius are well below the
16 temperatures where thermal runaway would occur.

17 If you look back at the earlier table
18 in here, it talks about the temperatures the
19 batteries can be stored. They can be stored up to 60
20 degrees Celsius for one month. But they only want
21 to be charged if they are less than 45 degrees
22 Celsius. So, there is a range of different perimeter
23 space that the systems work to keep the battery
24 within to prevent degradation and for a number of
25 properties.

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1 Q Well, is thermal runaway equally likely
2 when a cell is being charged versus when a cell is
3 being stored?

4 A One of the factors -- and this is
5 described in the 921 as well -- is it's the state of
6 charge of the cell. The higher state of charge, the
7 more likely it's to go into thermal runaway. The
8 more severe thermal runaway would be. So, there is a
9 variety of factors that are important in determining
10 whether a cell goes into thermal runaway.

11 Q So, is it your opinion, then, that two
12 battery cells, ones that have the same state of
13 charge, one is under charge and one is just being
14 stored, they would have equal potential for thermal
15 runaway?

16 A No.

17 Q So, the one under charge is more likely
18 to go into thermal runaway, correct?

19 A Typically, or equal.

20 Q And what is --

21 What other circumstances that you can
22 envision where that would not be true?

23 A It depends on environmental factors.
24 What the ambient temperature is. What conditions it
25 is being exposed to. Whether it's been damaged in

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1 some other means prior to that.

2 Q So, assume that they are identical
3 cells and they are not damaged.

4 Under what circumstances is it more
5 likely that a cell being stored would go into thermal
6 runaway than one that was under charge, same state of
7 charge?

8 A I mean, all else being equal, I am not
9 aware of a specific issue; but, again this would be a
10 better question for Dr. Horn.

11 Q Now, you said that you reviewed the
12 notes of Mr. Galler who physically examined and was
13 there at the laboratory examination of the materials
14 that were removed from the fire scene including the
15 battery management system and the battery board,
16 correct?

17 A Correct.

18 Q Do you recall that anything about
19 whether the safety devices that were designed to
20 prevent thermal runaway in this specification from HP
21 were actually present and enabled on the battery pack
22 that was in the computer at the time of the fire?

23 A So, you are characterizing it as
24 specific safety systems that are designed to prevent
25 thermal runaway. I don't know that I agree with that

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1 characterization. Generally, there were safety
2 systems that were in the HP battery that weren't in
3 the incident battery. It was Mr. Galler's
4 observation.

5 Q So, for instance, over temperature
6 protection was not enabled in the battery that was in
7 the laptop at the time of the fire, correct?

8 A I think more specifically there weren't
9 temperature sensors in the battery.

10 Q And as a result, then, the over
11 temperature safety device was not enabled?

12 A Correct.

13 Q So, when the battery cells got to
14 greater than 46 degrees Celsius, there was nothing in
15 the battery management system that would turn off the
16 charge under those circumstances?

17 A That's my understanding. But again,
18 this is something that Mr. Galler and Mr. -- or Dr.
19 Horn looked at in more detail than I.

20 Q Well, you came to an opinion as to the
21 most likely cause of the thermal runaway in this
22 battery pack, correct?

23 A Correct.

24 Q And in order to weigh the options there
25 is only two options, right, either external fire or

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1 it was an internal event within the battery cells,
2 right?

3 Those are the two options?

4 A I mean, by internal, you also mean that
5 the damage could have been battery -- the battery
6 could have been damaged or impacted, yes.

7 Q So, you are saying that you don't have
8 any direct knowledge of the safety systems intended
9 to prevent the internal components from going into
10 thermal runaway under charge, right?

11 That's Dr. Horn?

12 A No. What I said is Dr. Horn has looked
13 into more of the details of the specifics of the
14 systems for these batteries than I have.

15 Q Well, he might have, but you came to an
16 opinion what was more likely the cause of the thermal
17 runaway, correct?

18 A That's correct.

19 Q So, tell me how you evaluated the lack
20 of safety systems to prevent thermal runaway in these
21 cells when you made your judgment as to what was more
22 likely?

23 A So, again, you keep on characterizing
24 these safety systems as systems that would prevent
25 the thermal runaway of cells. I mean, they don't --

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1 You know, batteries externally heated,
2 these safety systems don't prevent a thermal runaway
3 of a cell. So, I don't agree with the
4 characterization you keep on using.

5 Q Well, in other words, you have come to
6 the conclusion without any consideration of safety
7 systems that it could only have been external heat
8 that caused these cells to go into thermal runaway?

9 A I don't agree with that either.

10 Q Okay.

11 So, tell me what evaluation you did of
12 the other alternative that it was not external heat
13 but it was an internal event within one of the
14 battery cells that started the thermal runaway
15 reaction?

16 A So, you know, I described this in more
17 detail in my report, but I reviewed a variety of
18 different factors. Fire damage. Thermal damage to
19 the computer. To the room. Descriptions of
20 observations by Ms. Marcellin. The report of Dr.
21 Horn. A variety of factors to look at this. And,
22 you know, I think the difference between the expert
23 opinions is whether, you know, the cells went into
24 thermal runaway that started the fire or whether the
25 cells went into thermal runaway as a result of a

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1 pre-existing fire. And in reviewing all of that
2 information, my opinion is that the cells went into
3 thermal runaway due to an existing fire.

4 Q Okay.

5 A And heat exposure from an existing
6 fire.

7 Q So, you made the determination that it
8 was more likely an existing fire than something that
9 happened internally in the battery cells?

10 A Correct.

11 Q And in order to fairly make that
12 judgment, you would have to consider all of the
13 evidence that related to whether it could have been
14 an internal failure of the battery cells versus all
15 the evidence that would support your theory that it
16 was an external fire source?

17 A Could you repeat that?

18 Q Yes.

19 In order to --

20 You've determined it is more likely
21 than not that your theory is correct that it was an
22 external fire, you would have to weigh all of the
23 evidence supporting that versus all of the evidence
24 supporting that it was an internal event that caused
25 the thermal runaway, correct?

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1 A Correct.

2 Q And some of the evidence supporting the
3 internal runaway theory would be the lack of safety
4 systems that would prevent the internal components of
5 the cells from going into thermal runaway?

6 That would have to be considered,
7 right?

8 MS. WANEMAKER: Objection to form.

9 You can answer, if you can.

10 A Correct. So, I am referring more
11 generally to safety systems that are in the batteries
12 that are made to keep them in a safe operating range
13 where they won't damage the cells. The cells won't
14 deteriorate as much as if they were operating in
15 other extremes. So, those aren't necessarily systems
16 that are specifically put in place to prevent thermal
17 runaway. But yes, you do need to evaluate those
18 factors as well.

19 Q So, it's your testimony, then, that the
20 safety systems preventing overcharge, overvoltage
21 over temperature and cell imbalance are intended by
22 HP not to prevent thermal runaway explosions but are
23 only intended to maintain the quality of the battery
24 cells?

25 Is that your testimony?

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1 A No.

2 Q So, the safety systems may have
3 multiple functions but one of those functions is to
4 turn off the charge when the temperature or the
5 voltage or the charge becomes at a level that could
6 cause thermal runaway, correct?

7 A No. It's to turn off at temperatures
8 well below the temperatures you would get thermal
9 runaway.

10 Q Right.

11 But that's my point.

12 In other words, you agree that that
13 function of preventing the cells from getting to
14 levels of charge or temperature or voltage that could
15 result in thermal runaway, the purpose of these
16 safety devices is to shut down the power before that
17 happens?

18 A Correct.

19 Q And the lack of these safety devices to
20 shut down the power before that happens would have to
21 be a factor that you considered in making your
22 judgment as to what caused thermal runaway, correct?

23 A Yeah, that's one factor.

24 Q Just one factor.

25 Okay.

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1 And are you saying that you relied
2 entirely on Mr. Galler and Dr. Horn in ruling out the
3 potential that these battery cells went into thermal
4 runaway without an external source but because of
5 overcharge, over temperature, overvoltage?

6 A No.

7 Q So, tell me, then, what was the basis
8 of your determination that these cells did not go
9 into thermal runaway because of over temperature,
10 overcharge, overvoltage or cell imbalance?

11 A Right. So, it's a number of factors.
12 One is the witness observations of Ms. Marcellin
13 about the size of the fire, the amount of smoke, the
14 growth of the fire and when -- at what time she
15 actually observed various factors of the fire.

16 Q So, that's one factor.

17 You are saying that -- you are saying
18 Ms. Marcellin's description of the events and the
19 timing of when those events occurred led you to be
20 able to rule out that the cells went into thermal
21 runaway on their own based upon overcharge
22 overvoltage, over temperature, cell imbalance?

23 A That's one factor.

24 The fire patterns in the room are
25 another factor. A lot of the damage to the laptop

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1 and other objects in the room was clearly caused by
2 radiant heating; whereas if the cells had just
3 initiated in the thermal runaway, I would expect much
4 more severe damage adjacent to the -- to the laptop
5 where as we see really more widespread damage to the
6 laptop and to other objects more based on what their
7 view factor would have been to a hot layer of the
8 ceiling and radiant heat transfer from the ceiling.

9 Q So, it's your testimony that the damage
10 to the laptop was uniform?

11 MS. WANEMAKER: Objection to the form.

12 You can answer.

13 A I don't believe that's what I stated,
14 no.

15 Q So, there was a pattern --
16 I believe you stated that there was a
17 pattern of damage to the laptop that indicated it was
18 damaged by radiant heat from a thermal layer?

19 A That's correct.

20 Q And that radiant heat from a thermal
21 layer would be a relatively symmetrical application
22 of radiant heat depending on the configuration of the
23 laptop?

24 A No.

25 Q So, you are saying the radiant heat

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1 toward the screen on the keyboard side is likely to
2 be very different than the radiant heat on the touch
3 pad side of the laptop?

4 A No, I didn't say that.

5 Q Okay.

6 So, the flat surface, then, of the
7 laptop where the keyboard is and the touch pad is,
8 that should receive a relatively symmetrical dose of
9 radiant heat, right?

10 A The top surface would, yes. If there
11 is not other objects in between blocking the radiant
12 heat.

13 Q Were there any, in your view, any other
14 objects that were blocking the radiant heat from some
15 part of the surface of the keyboard or the laptop
16 versus other parts?

17 A If you are looking more globally at the
18 laptop, you know, the top of the screen had more
19 thermal damage which would have been more impacted by
20 radiant heat. The top of the surface of the keyboard
21 has more heat damage from the radiant heat. The
22 sides have less damage. The bottom of the screen is
23 in the area with less damage. You know, there is
24 variations in the level of damage based on what the
25 view factor would be. You have the impact of the

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1 armoire behind the laptop, which blocks some objects.
2 So, there is objects around the laptop that have very
3 little fire damage because they are shielded somewhat
4 by the armoire.

5 Q And actually, what I was trying to ask
6 and I probably didn't say it appropriately, I am
7 asking about the surface of the laptop where the
8 keyboard is.

9 A Uh-huh.

10 Q That was a flat surface, correct?

11 A Other than the fact that the keys
12 aren't flat, but, yes, it is a relatively flat
13 surface.

14 Q It was in a horizontal position on the
15 shelf or the armoire?

16 A Correct.

17 Q And that entire horizontal surface
18 that's on the shelf of the armoire, not the screen
19 but the surface where the keyboard is, would be
20 expected to receive a uniform or relatively uniform
21 dose of radiant energy from a thermal heat layer,
22 correct?

23 A Correct.

24 Q And is it your testimony that the
25 damage to that surface of the laptop is uniform?

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1 A Around the keyboard area and the touch
2 pad, yes.

3 Q So, the hole in the surface over the
4 battery management system over the battery pack, is
5 that something you are defining as some different
6 part of that horizontal surface?

7 A Yes. I thought you were referring to
8 the touch pad and the keyboard.

9 Q Okay.

10 So, I am talking about the inch and a
11 half to two inches beyond the keyboard.

12 That is more severely damaged, correct?

13 A That's correct.

14 Q And your opinion of that is that was
15 caused by thermal runaway?

16 A It was caused by a combination of the
17 radiant heating from the hot layer and the thermal
18 runaway that eventually occurred in the cells.

19 Q Now, tell me about your understanding
20 of the battery pack itself.

21 In other words, what was that comprised
22 of?

23 A It was comprised of six 18650 cells and
24 a battery management system or a BMU.

25 Q That was enclosed in a plastic casing,

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1 correct?

2 A Correct.

3 Q And the battery cells, themselves, were
4 wrapped in plastic?

5 A That's correct.

6 Q And those were all in a compartment in
7 the laptop, right?

8 A That's correct.

9 Q And you reviewed the cells --
10 You didn't look at them because you
11 didn't look at anything other than pictures, but you
12 saw pictures of the cells, correct?

13 A That's correct.

14 Q And you relied on Mr. Galler and Dr.
15 Horn with regard to the remnants of those cells and
16 what they represented?

17 A No, I reviewed those, but in part
18 relied on their observations as well.

19 Q You came to the conclusion -- that I
20 think you wrote in your report -- that four of the
21 cells went into thermal runaway and two of the cells
22 didn't?

23 A That's correct.

24 Q All right.

25 And was that a determination you made

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1 or did you rely on those other two experts to come to
2 that conclusion?

3 A I relied on to Dr. Horn to come to that
4 conclusion.

5 Q Okay.

6 So, you assumed his opinion was correct
7 and you based your opinion on his opinion?

8 A I reviewed his report, what he
9 described, and that's consistent with what I expected
10 based on his descriptions as well.

11 Q So, you are saying you came to the
12 opinion that they went to thermal runaway from
13 reading his report?

14 A I am relying on his opinion, but I've
15 also reviewed his opinion and agree with it.

16 Q Okay.

17 So, you agree with it based upon some
18 independent knowledge of what cells look like from
19 thermal runaway?

20 A Yes. I've seen cells that have gone
21 through thermal runaway in the past.

22 Q Okay.

23 A Can we take a break when it's a
24 convenient time?

25 MR. SCHWARZ: Sure.

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1 MS. WANEMAKER: I was going to say if
2 this was a good time.

3 MR. SCHWARZ: Sure.

4 MS. WANEMAKER: Would 15 minutes be
5 okay?

6 MR. SCHWARZ: Sure, Jackie.

7 MS. WANEMAKER: So, we will come back
8 at 11:40?

9 MR. SCHWARZ: Sure.

10 VIDEOGRAPHER: The time is 11:24 a.m.
11 and we are going off the record.

12 (Whereupon, a short break was taken)

13 VIDEOGRAPHER: The time is 11:41 a.m.
14 We are back on the record.

15 MS. WANEMAKER: Steven and I had a
16 brief discussion off the record during the
17 break with respect to having usual
18 stipulations in this case, agreeing to the
19 ordinary stipulations; objections reserved
20 for time of trial except as to form; with
21 Dr. Myers to read and sign.

22 MR. SCHWARZ: And that would apply from
23 the beginning of the deposition.

24 MS. WANEMAKER: Thank you.
25 Yes.

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1 Q Dr. Myers, would you turn to tab five
2 in your notebook, which I am going to mark as Exhibit
3 6 and is the Allegany County Fire Investigation Team
4 Report. And this document has HP Bates Stamped
5 numbers on it.

6 And I would ask you to turn to HP
7 00409, which is the beginning of the narrative
8 section of the report?

9 A Okay.

10 Q This is one of the documents that you
11 did review in preparing your report, correct?

12 A That's correct.

13 Q And it appears that from this narrative
14 that on January 24th, 2020 the Fire Investigation
15 Team was contacted at about 4:52 in the morning.

16 Do you interpret it that way?

17 A I don't see that specific line, but
18 that sounds correct. That's about the time I recall.

19 Q At the top it says:

20 "Chief Brian Hemphill requested the
21 Allegany County Fire Investigation Team at
22 4:52"?

23 A Yes.

24 Q Then it says four different
25 investigators -- Edwards, Aderhold, Valeri and

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1 Luckey -- responded.

2 So, there were actually four
3 investigators that went?

4 A Correct.

5 Q And then, if we go down a little bit
6 further, there is a reference --

7 There is a statement that says:

8 "The Fire Investigation Team began
9 working from least to most damage."

10 Do you see that?

11 A I do.

12 Q And that's what 921 --

13 The methodology of 921 guidelines
14 recommend, correct?

15 A I think historically it did. I don't
16 think it specifically recommends that now.

17 Q So, the first place they went to was
18 the master bedroom where Mr. Hollowell was found,
19 correct?

20 A That's the first room they note, yes.

21 Q By this point, Mr. Hollowell had been
22 removed -- his body had been removed after his death,
23 correct?

24 A Correct.

25 Q And they took pictures of the room

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1 after Mr. Hollowell's body had been removed?

2 A Correct.

3 Q And you looked at those pictures?

4 A I did.

5 Q And they say here that the pictures
6 revealed or the room by their personal investigation
7 had only smoke and certain damage?

8 A Correct.

9 Q And is that --

10 Based upon your review of photographs,
11 do you agree with that?

12 A I do.

13 Q Then they proceed to describe what they
14 saw in the kitchen/dining room area which they say
15 showed heat and smoke damage, correct?

16 A That's correct.

17 Q And in your review of the photographs,
18 do you agree that that's the only damage that was
19 shown in the kitchen and dining room area?

20 A That's the type of damage I observed,
21 yes.

22 Q Okay.

23 The next thing they remark on is the
24 area closer to the living room was where heat damage
25 was observed in the kitchen, right?

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1 A Correct.

2 Q And is that also something you agree
3 with by looking at the photographs?

4 A Yes.

5 Q Did you look at what they were
6 describing also in the Matterport as well?

7 A Yeah. I did review their photographs,
8 Mr. Gorbett's photographs or Dr. Gorbett's
9 photographs and the Matterport images.

10 Q And so, if there was anything that
11 wasn't explicitly captured in the photographs of
12 Mr. Gorbett or the fire investigators from Allegany
13 County, the Matterport allowed you to also look at
14 other angles that weren't captured in still
15 photographs, correct?

16 A Correct. But the Matterport was at a
17 later time than the Allegany County photographs. So,
18 there had been changes to the scene by the time the
19 Matterport was taken.

20 Q Right.

21 But the Matterport would have revealed
22 the smoke, soot, fire and char damage, correct?

23 That wasn't changed?

24 A Right. I mean, objects have been
25 moved. But generally you can see most of the home

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1 from the Matterport. Some portions of the home you
2 can't see, but most of it you can.

3 Q So, then, the living room --

4 It says the living room, site C, had
5 less fire heat damage than the A side, correct?

6 A Correct.

7 Q So, if you are looking from the
8 kitchen, that would be the left side of the living
9 room had less damage than the right side of the
10 living room?

11 A Correct.

12 The area near the couch had more
13 significant damage.

14 Q And the area near the couch --

15 The couch was located on the wall that
16 was the common wall between the office and the living
17 room, correct?

18 A No.

19 Q What was in between --

20 In your recollection of the way the
21 house is set up, what was in between the living room
22 and the office?

23 Was there another room, you believe?

24 A There was a furnace, but on that wall
25 was an electric fireplace, a TV; objects like that.

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1 Q Why don't we take a look at the
2 photograph. Maybe that will help refresh your
3 recollection.

4 These photographs are mostly marked
5 with HP numbers, but some of them may have been cut
6 off by the hole punching. But let me find the number
7 and then I will see if I can direct you there.

8 So, if you take a look at HP 00433,
9 there's a picture of the couch.

10 A Correct.

11 Q And the wall above the couch is
12 significantly fire damaged, correct?

13 A Yes. The wall. On the ceiling.
14 That's correct.

15 Q What did --

16 In your understanding of the geometry
17 of the house, what is behind that wall?

18 A The front of the house. Outdoors. I
19 am not sure if there is actually a screened in porch
20 there or if it's just the outside.

21 Q What is behind the wall that is the 90
22 degree angle wall to the right of that couch?

23 A The kitchen.

24 Q Okay.

25 So, going back to the narrative

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1 description then, it says:

2 "The hallway that led to the office,
3 bathroom and second bedroom had fire damage
4 on both A and C sides about 4 feet off the
5 floor."

6 Do you see that?

7 A I do.

8 Q And is that consistent with your
9 observations based upon your review of the
10 photographs?

11 A Yes.

12 That's the approximate height.

13 Q So, the hallway really just has the
14 left and the right side as you are walking toward the
15 office and both of those walls were damaged by --
16 showed fire damage about 4 feet off the floor?

17 A Approximately.

18 Q And below that area, there was no fire
19 damage, correct?

20 A That's not true, no.

21 Q Well, you indicated something in your
22 report called the line of demarcation.

23 What is that?

24 A So, that is a line between the most
25 significant damage from a hot layer and less damage.

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1 Q So, if we take a look at --

2 Let's take a look at a picture of the
3 hallway. Let's take a look at HP 0446. It's a
4 photograph of a door.

5 A I'm sorry. Let me get there.

6 You said 446?

7 Q Yeah.

8 VIDEOGRAPHER: Dr. Myers, is there any
9 way we can try to center you on the camera
10 because you are --

11 THE WITNESS: Sorry. I am trying to
12 look at the binder.

13 Q Were you able to find that?

14 A Yes.

15 Q Oh, I am sorry. I didn't know if you
16 had found it.

17 So, do you know what this picture
18 depicts?

19 A Yes.

20 So, the 446 shows a door to the spare
21 bedroom. There is a window on the right. On the
22 left is the entrance to the office or sewing room.

23 Q Okay.

24 That's where the HP Pavilion laptop
25 was, correct?

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1 A That's correct.

2 Q So, and just talking about the line of
3 demarcation, it looks like sort of a diagonal line
4 across this door where everything, you know, below
5 that diagonal line looks to be, I believe, from the
6 level of the doorknob down looks to be undamaged,
7 correct?

8 A Or less damage, yes.

9 Q Do you see any damage to the door from
10 the doorknob down that you believe is caused by fire?

11 A Like, directly below the doorknob there
12 looks to be some discoloration. We can't see the
13 floor in this picture.

14 Q Well, in your recollection, in the
15 entire building how many areas was there damage to
16 the floor area or just above the floor area?

17 A There is a few areas. For instance,
18 the couch is in the living room. It's damaged at
19 levels below the line of demarcation. The furnace is
20 as a lower line of demarcation than the general
21 hallway. If you look at the window across from the
22 office. You know, there is material that is dripped
23 down from that. So, you see some melted material and
24 damaged material at lower levels. But generally, you
25 know, things are more heavily damaged above the line

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1 of demarcation than below the line of demarcation.

2 Q Except for the closet area, correct?

3 A Correct. The closet area is another
4 area with low burn.

5 Q And low burn means a burning area lower
6 down closer to the floor?

7 A Correct.

8 Q Okay.

9 A If you go back and look at page or
10 image HP 00434, you know, you can see lower damage
11 below the window there in the hallway.

12 Q Okay.

13 Going back to the narrative then, the
14 door we were just looking at, it says:

15 "During the time of the fire the door
16 to the second bedroom of the trailer was
17 closed and the second bedroom showed only
18 heat and smoke damage."

19 Do you agree with that from your
20 photographs review?

21 A Correct.

22 Q Now, the four fire investigators for
23 Allegany County then say:

24 "The living room on the A side did have
25 significant damage to the area of the

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1 couch. The couch was an electric couch
2 with heating coils built in. We were able
3 to verify that it was not plugged in and
4 later when interviewed Ms. Marcellin
5 confirmed this."

6 Do you see that?

7 A You preference that statement by saying
8 the four investigators said this. I believe this is
9 a report from Mr. Luckey. I don't know if that --
10 it's by all four investigators or just him, but it
11 says it's signed by him. But I do see that
12 description in the report.

13 Q Okay.

14 And you never talked to Mr. Luckey,
15 correct?

16 A I did not, no.

17 Q So, from the photographs --

18 So, you weren't able to investigate the
19 scene, correct?

20 A I did investigate the scene. I wasn't
21 able to go there in person.

22 Q But you weren't able to investigate the
23 scene in person; you can only look at photographs?

24 A The photographs. Descriptions. The
25 Matterport. So, a number of things.

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1 Q In any event, did you find anything in
2 the information that you just listed that you looked
3 at to do your investigation in this case that
4 contradicts the statement of the Allegany fire
5 investigators that they verified that the couch
6 wasn't plugged in?

7 A I haven't seen any photographs that
8 document that.

9 Q That document that it wasn't plugged
10 in?

11 A Whether it was or wasn't plugged in.

12 Q So, did you discount their statement
13 that they verified that it wasn't plugged in, in some
14 way?

15 A I mean, it's something that I couldn't
16 independently verify.

17 Q Well, you couldn't independently verify
18 a lot because all you did was look at somebody's
19 pictures, right?

20 A That is not correct. The NFPA 921
21 talks about the fact that investigators should
22 document things so that other parties can review
23 their documentation. So, that's not correct.

24 Q And that would be, for instance,
25 Mr. Gorbett's documentation that you said in your

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1 report you looked at but you didn't look at?

2 A No. I did look at his photographs.
3 Typically, it's documenting with photographs. So, I
4 did document his photographs. I mean, I did review
5 his photographs and his Matterport.

6 Q Right.

7 But Mr. Gorbett's notes may have
8 indicated why the Allegany fire investigators
9 determined the couch wasn't plugged in, correct?

10 You just didn't look at those notes.

11 MS. WANEMAKER: Objection to the form.

12 If you can answer, you can.

13 A I don't know if he has notes or what
14 those notes do or do not say.

15 Q What is your evidentiary basis of
16 contending that the couch was plugged in?

17 A Well, clearly it's an area of low fire
18 burn so it's something that would be considered as a
19 possible origin. So, you know, how you --

20 You then have to look at how that could
21 having ignited. There was a candle adjacent to it.
22 So, it could have been an open flame that ignited it.
23 But obviously, one cause that you would look at is
24 whether, you know, electrical wiring that was part of
25 it such as the heating elements could have ignited

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1 it. But that was something that I wasn't able to
2 independently verify. They say it wasn't plugged in.
3 I wasn't able to independently verify that.

4 Q But if you had been at the scene you
5 would have been able to independently verify that,
6 correct?

7 A No. The couch had already been moved
8 by the time of the investigation.

9 Q But you could have investigated whether
10 there was any electrical arcing in the couch or in
11 the mechanisms that were part of the mechanism that
12 either heated the couch or made the couch -- turned
13 into a recliner?

14 You could have investigated that,
15 correct?

16 A Typically, that's something you would
17 have looked at in a lab exam, but the couch wasn't
18 retained.

19 Q If the investigators believed that the
20 couch was the source of the fire, would 921 have
21 recommended that they take portions of the couch for
22 investigation in a laboratory?

23 A 921 actually speaks more broadly than
24 that saying you should document and retain items
25 that, you know, support your theory of what happened

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1 as well as possible alternative causes. So, it's
2 really more broad than that.

3 Q So, if the investigators hadn't ruled
4 out the couch at the scene, they should have retained
5 parts of the couch and brought it in for laboratory
6 inspection?

7 A I think NFPA 921 specifies that even
8 alternative causes that you don't believe necessarily
9 started the fire should be documented and retained.

10 Q So, you are saying that the
11 investigators, which would include the Allegany
12 County investigators, Mr. Karasinski who is on the
13 committee that devises 921 and revises 921, and Mr.
14 Gorbett, all failed to follow -- and the insurance
15 investigator for NEFCO, all failed to retain
16 important evidence from the couch and send it out for
17 laboratory examination?

18 A I think you have to look at the
19 different roles of all those parties. We are looking
20 at a report by Mr. Luckey that was written on
21 February 21st. So, that was prior to the inspection
22 you are talking about. I don't know. He may have
23 been complete with his investigation and wasn't
24 interested in it.

25 Obviously, people representing the

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1 house or the Plaintiffs have broader interests in
2 what caused the fire than a party that is just
3 representing a single object where they may be
4 looking more at whether or not the device they made
5 started or didn't start the fire and may be less
6 interested in alternative causes.

7 Q Well, certainly Mr. Gorbett, who was
8 retained by HP, theoretically to prove that the HP
9 device didn't cause the fire, would have had interest
10 in other alternative theories, correct?

11 A I mean, you made a few statements. I
12 assumed he was retained to determine whether or not
13 the HP device was the cause of the fire. Not to
14 determine just one impact, you know. The party that
15 designed the couch would have had more interest in
16 evaluating the couch.

17 Q The party that designed the couch, did
18 they have an investigator at the scene?

19 A I don't believe so. I don't believe
20 whoever was running it put that party on notice.

21 Q Well, your theory is that the fire
22 started somewhere other than the HP laptop, correct?

23 A That's correct.

24 Q And you are saying that Mr. Gorbett
25 wouldn't have considered your theory as a possibility

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1 when he arrived at the scene?

2 A I would think he would consider that
3 theory. I don't know what he did or didn't consider.
4 I would hope most fire investigators would have
5 considered alternative causes of the fire.

6 You know, here the Allegany Fire
7 Department is obviously commenting on the couch and
8 commenting on whether or not it was energized,
9 considering it is a possible cause. I think most
10 fire investigators would consider that.

11 Q And when they determined that it wasn't
12 energized, then, they decided to move on and look for
13 other causes, right?

14 MS. WANEMAKER: Objection to form.

15 A I don't know what they did or didn't
16 do.

17 As NFPA 921 describes, oftentimes the
18 actual cause of the fire isn't determined 'til near
19 the end of the investigation. So, you know, it's
20 typically too preliminary to make a determination
21 about something like this before you have the full
22 information before you have full witness statements
23 before people are deposed before you have other
24 information. You know, so you err on the side of
25 collecting additional information and a lot of

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1 objects besides just what you believe started the
2 fire. NFPA 921 describes that you should document
3 both what you think started the fire and possible
4 alternative causes.

5 Q So, you are saying 921 recommends that
6 you retain for laboratory examination any other
7 possible cause of the fire?

8 A I mean, it says what it says. I don't
9 think that's the specific language, but it describes
10 that you should document and retain other possible
11 hypothesized causes.

12 Q And for all you know, Mr. Gorbett did
13 document and ruled out of the couch, right, because
14 you didn't look at his notes?

15 MS. WANEMAKER: Object to the form.
16 You can answer.

17 A I reviewed hundreds of his photographs.
18 If he had disassembled the couch, I would think he
19 would have photographed it.

20 Q So, the fact that he didn't photograph
21 it, means that he didn't disassemble the couch,
22 right?

23 A I don't think it definitively means
24 that one way or the other. But my assumption would
25 be that if he did disassemble the couch, he would

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1 have photographed that.

2 Q And if he seriously considered the
3 couch as the origin of the fire, then, don't you
4 believe as a diligent fire investigator he would have
5 disassembled the couch?

6 A No. Typically, that's something that
7 would have been done in a laboratory investigation;
8 not in the field. Again, you have to look at the
9 roles of the individual fire investigators. He may
10 have not seen that as his role to investigate the
11 couch.

12 Q So, if it wouldn't be Mr. Gorbett's
13 role to look for the ignition source and the origin
14 of the fire, then what would his role be?

15 A To investigate the fire and determine
16 whether or not the HP product caused the fire.

17 Q And you have no idea what his
18 conclusion was on that issue, right?

19 A I do not.

20 Q Because you didn't talk to him and you
21 didn't review his notes, correct?

22 A I don't know if he reached a
23 conclusion. I haven't talked to him or reviewed his
24 notes.

25 Q But he was there to help determine if

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1 it wasn't HP what it was, correct?

2 A I don't know. He was there to document
3 the scene and investigate the role of the HP laptop.

4 Q And all you saw of that investigation
5 was his photographs?

6 That was it?

7 A I saw a few hundred photographs he took
8 and the Matterport that he recorded.

9 Q Okay.

10 Now, the next sentence of the Allegany
11 fire investigators, or Mr. Luckey, in particular,
12 was:

13 "We were --"

14 He says "we." So, I assume he is
15 talking for the group, but if you want to assume it
16 was just him.

17 It says:

18 "We were able to rule out the gas
19 furnace. The wooden louvered door for the
20 furnace did not show signs of charring on
21 the inside."

22 And has two pictures of that.

23 Correct?

24 A I actually don't see where you are.

25 Okay. Actually, I still don't see where you are.

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1 Did you move to a different page or?

2 Q I am on page HP 00409, which is --

3 The next sentence is after he said that
4 he verified the couch wasn't plugged in --

5 A Okay. I see where you are right now.

6 Q So, he states that the wooden louvered
7 door for the furnace did not show signs of charring
8 on the inside.

9 Do you see that?

10 A I see where he says that, yes.

11 Q And you looked at pictures of the
12 wooden louvered door that was the door to the
13 compartment where the furnace was located?

14 A Correct.

15 Q And did you find charring on the inside
16 of the door where he did not?

17 A No. I saw burned damage on the louvers
18 of the furnace. You can see there is some
19 discoloration on the lower areas of the louver door
20 in photograph HP 00456.

21 Q So, your evaluation of photographs came
22 to a different conclusion than Mr. Luckey's
23 evaluation in person of the furnace and the louver
24 door for the furnace?

25 A He is saying he did not see charring.

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1 I am saying that you do see discoloration on the
2 lower louvers on the doors.

3 Q Right.

4 So, you are saying that he is wrong and
5 by your review of his photograph there is charring on
6 the lower louvers of the door?

7 A No. I am saying that there is
8 discoloration.

9 Q Well, he didn't say discoloration. He
10 said charring.

11 So, the question is:

12 Do you see that as charring or
13 discoloration of a different type?

14 A In 456, you see discoloration. You do
15 see blistering of paint on the doorjamb for the
16 furnace.

17 Q So, you are saying that your evaluation
18 of his photograph, you came to a different conclusion
19 as to what is shown on the door than he did, and his
20 investigators did, when they investigated the scene
21 in person?

22 A I do --

23 I am saying I see thermal damage to
24 those areas, whether he --

25 What he is saying is somewhat

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1 different. He is saying he doesn't see charring.

2 Q Okay.

3 Do you see charring?

4 A No. Like I said, I see blistering of
5 paint. I see discoloration. But I don't
6 specifically see charring.

7 Q Okay.

8 A I do see thermal damage there.

9 Q You don't disagree with that, on the
10 charring?

11 A Correct.

12 Q Okay.

13 So, in looking at the furnace and the
14 door, the louvered door to the furnace, did you reach
15 an opinion that the furnace ignited a fire that then
16 spread to the rest of the house?

17 A No. But it's an ignition source that I
18 can't rule out.

19 Q And did you come to some --

20 So, an ignition source then has to
21 ignite something that the fire spreads.

22 What was your theory that the furnace
23 was the ignition source that spread through the rest
24 of the house?

25 How did it do that?

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1 A Sure. So, the furnace is adjacent to
2 the closet that has heavy damage and so, you know,
3 there is a number of ways that the furnace could have
4 heated material on the adjacent wall to the closet
5 and spread to the closet.

6 Q And what evidence did you find of
7 heated material in the closet that spread through the
8 wall?

9 A Well, the wall of the closet is charred
10 and consumed. There is damage to that. And my
11 understanding was that the furnace was never removed
12 or examined or the wall between the origin --

13 You have the wall near the furnace and
14 the closet.

15 Q Would Mr. Gorbett have been able to do
16 that investigation if he had wanted to?

17 A I don't know. He could have requested
18 that of the other parties. I don't know. I don't
19 know what the protocol was for that inspection.

20 Q Did you find any photographs that
21 showed charring on the furnace side of that wall?

22 A No. You can't -- you can't see that.
23 The furnace was never removed.

24 Q So, you are saying that the four
25 Allegany fire investigators and Mr. Gorbett and

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1 Mr. Karasinski and Mr. Litzinger and the NEFCO fire
2 investigator all missed that because they didn't
3 remove the furnace?

4 Is that your assumption?

5 A I don't know why they did or didn't
6 remove the furnace, but they didn't remove the
7 furnace.

8 Q Right.

9 And you are saying that they should
10 have removed the furnace because you believe the
11 furnace caused the fire?

12 A It's a potential source that should
13 have been considered.

14 Q Well, a meteor could have hit the house
15 and caused the fire, so. I mean, there are a lot
16 potential sources.

17 Are you saying that this was the likely
18 source that caused the fire?

19 A I don't think there is any reports of a
20 meteor hitting the house. I haven't seen any damage
21 to the roof of the house consistent with that. You
22 can actually research whether or not a meteor hit an
23 area. So, people examine whether lightning struck
24 the house. So, you do consider a number of different
25 causes.

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1 Q So, they considered lightning, but they
2 didn't consider the furnace even though they did the
3 inspection?

4 A That's correct.

5 There was -- there was a note from one
6 of the first responders that he observed that the
7 furnace was blown out.

8 Q And what does that mean to you?

9 A I have to go back to the specific
10 language. But that subcomponent of the furnace was
11 pushed out. And I know in the earliest pictures I've
12 seen the louvered door on the furnace does appear to
13 be blown out.

14 Q And blown out, meaning, so that there
15 was some force that bent the louvers?

16 A No. That it was pushed out.

17 Q And this was a gas furnace, correct?

18 A That's correct.

19 Q Is it your, then, theory that when that
20 blowout occurred, that that caused the fire?

21 A That's something that hadn't been
22 examined. There could be a number of ways that a
23 furnace can start a fire. With a gas appliance, you
24 could have a hard start where gas accumulates and
25 then ignites that ends of pushing out components or

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1 could ignite something. You can have damaged
2 insulation in a furnace that then causes it to heat
3 adjacent walls and starts fires. So, there is a
4 number of potential ways that a furnace can cause a
5 fire that it doesn't appear were investigated.

6 Q What physical evidence that you
7 observed supports any of those theories?

8 A Well, there is a description from one
9 of the first people, the firefighters in the house
10 that it was blown out and we do see fire damage, you
11 know, in the adjacent closet. That's one of the more
12 heavily burned areas. There is damage to the walls
13 of the closet. So, again, that's something that
14 can't be ruled out. But I can't say that it caused
15 the fire either. It hasn't been investigated.

16 Q The next statement says:

17 "Electrical wires and the hard wired
18 smoke detector located in the hallway
19 between the furnace and office door was
20 inspected."

21 Do you see that?

22 A I do.

23 Q And what was your assumption with
24 regard to the smoke detectors in the house?

25 In other words, how many were there and

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1 how were they wired?

2 A My understanding is that there were two
3 or three smoke detectors in the house. I think the
4 house was built in 1980. So, I would assume smoke
5 detectors or they may have been replaced over time
6 because typically you are supposed to replace them
7 every ten years.

8 Ms. Marcellin testified that the one
9 near the office door was hard wired and that the one
10 near her door was battery operated. So, that was my
11 understanding based on her testimony.

12 I've reviewed the pictures of the smoke
13 detectors and the areas where they were mounted and
14 where the wiring was. It's not possible to confirm
15 one way or the other how they were installed.

16 Q Now, Mr. Karasinski testified that they
17 were both hard wired and they were wired together so
18 that when one went off, the other went off.

19 Is that something that you found
20 evidence to suggest was not true?

21 A Looking at the wiring near her bedroom,
22 I don't see any connections for a smoke detector near
23 there. I didn't see --

24 In the back of the smoke detector --
25 one of the smoke detectors -- I don't see any of the

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1 places where you would attach a connection. So, I
2 haven't seen any documentation of that. The wiring
3 near the outlet in the bedroom has wires in it and I
4 don't see any loose wires that you would connect.

5 Q So, you are saying that based upon your
6 review of the photographs of the smoke detectors, you
7 are able to determine that the smoke detector near
8 the office was not hard wired; even though the
9 investigators found that it was?

10 A That's not correct. That's not what I
11 said.

12 Q You don't see any evidence based upon
13 the photographs, but you are limited by the
14 photographs, correct?

15 A I think you may have misunderstood me.
16 Both the investigators and
17 Ms. Marcellin said that the smoke detector near the
18 office was hard wired. Ms. Marcellin said the smoke
19 detector near the bedroom she was sleeping in was
20 battery operated and wasn't hard wired.

21 I've looked at the photographs of the
22 smoke detector near there and the wiring near there
23 and I don't see evidence that it was hard wired.

24 Q But if you had been on the scene, you
25 would have been able to determine that one way or the

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1 other, correct?

2 A Not necessarily, no.

3 Q So, you wouldn't have been able to
4 determine if it was a smoke detector that had a
5 battery in it as a backup or when power was lost
6 versus a smoke detector that was completely battery
7 operated?

8 You wouldn't be able to determine that
9 by looking at it?

10 A If you knew the smoke detector that was
11 mounted there and depending on its condition you may
12 be able to verify that.

13 Q And there was no fire damage down at
14 that end of that hallway, correct?

15 We already went through that?

16 A Yes, there was less damage on that end
17 of the hallway.

18 Q So, had you been able to attend the
19 investigation and the inspection as Mr. Gorbett did,
20 you would have been able to definitively determine
21 whether or not that smoke detector was a wired smoke
22 detector with a battery backup versus an independent
23 battery operated smoke detector?

24 A You may or may not have the --

25 The earliest pictures I've seen of the

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1 smoke detectors, they are grouped together. So, it
2 is not clear where each one came from.

3 Q And then, it goes on a few lines down
4 to say that the office was observed for fire damage?

5 Right?

6 Do you see that?

7 A Are you referring to where it says:

8 "Next we observed the office area for
9 fire damage"?

10 Q Exactly.

11 And it says:

12 "The storage closet in the office had
13 some of the lowest burn."

14 And I think you described that
15 meaning, that means that the burn area closest to
16 the floor would be the lowest burn?

17 A Correct.

18 Q And then it says:

19 "We pulled out the clothing and found
20 that the floor was protected. We did not
21 find any wires or source of ignition in the
22 closet."

23 Correct?

24 A That's what it says. That's correct.

25 Q Now, did you find any wires or source

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1 of ignition in the closet by looking at photographs?

2 A I did not see anything in the closet
3 that was plugged in, no.

4 As I mentioned, you do have the furnace
5 on the adjacent wall that was a potential source of
6 ignition.

7 Q But that would be on the wall on the
8 other side of the closet?

9 In other words, not the closet wall
10 itself?

11 A Correct. It would be on the other side
12 of the wall.

13 Q And what were the walls made of?

14 Were they studs with drywall and
15 paneling or were they some kind of solid wall
16 substance; do you know?

17 A My understanding was it was wood two by
18 fours and then it had the paneling for the wall
19 surface.

20 Q Did the fire investigators or the
21 pictures determine that the damaged walls in the
22 closet if you look through the damaged paneling you
23 could see fire damage on the other side of that wall
24 by the furnace?

25 A I would have to go back and look at

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1 some of the pictures.

2 Q Well, your theory was that the furnace
3 could have caused the fire, that -- you would have
4 looked for that evidence, right?

5 A I did review that, but, you know, there
6 is hundreds of photos so I don't recall --

7 Q But your alternative theory was the
8 furnace caused the fire.

9 So, you would have been looking for any
10 evidence that would support that theory, I would
11 think?

12 A I would be looking for any evidence
13 that would support or refute the theory.

14 Q Did you find something?

15 A I am looking right now.

16 Q Are you able to look at Mr. Gorbett's
17 photographs while you are looking at photographs?

18 A Right now I am looking at the binder
19 that you supplied. If you would like me to, I can
20 look at the photographs of Mr. Gorbett.

21 Q I would like to look at Mr. Gorbett's
22 photographs because they haven't been produced; and
23 we requested them. I will just put on the record
24 that we requested everything that you looked at from
25 Mr. Gorbett and haven't received it. And we can take

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1 that up later.

2 But if you have photographs that Mr.
3 Gorbett took that support your theory that the
4 furnace caused the fire, then why don't we have you
5 look for them on the break and then you can mark them
6 as exhibits --

7 MS. WANEMAKER: We --

8 A I'm sorry. I didn't hear that.

9 Q I'm sorry.

10 Is there anything in your report that
11 shows photographs that support your theory that the
12 furnace caused the fire?

13 A I am still looking at the photos of the
14 binder. And so, you know, there is photographs HP --
15 actually, I think there is a hole through it -- HP
16 00463 that shows, you know, the wall in between the
17 furnace and the closet burned through. Let me look
18 at my --

19 Q Okay.

20 Let me find that.

21 A I think I have that same photograph as
22 figure 22 in my report.

23 Q So, I am looking at the wrong
24 photograph. So, 63.

25 So, photograph 63 shows the door with

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1 the ironing board hanging on it?

2 A Correct.

3 Q And the lower part of the closet has
4 burn damage, correct?

5 A I think most of the closet has burn
6 damage in the lower portion you could see that the
7 wall is burned through.

8 Q Right.

9 And it looks like a light brown color
10 on the other side where the wall is burned through.

11 Am I looking at the right thing?

12 A That's correct.

13 Q So, you are saying that that light
14 brown color, which doesn't look burned, is evidence
15 that the fire came through that wall that doesn't
16 look burned?

17 A I don't know what that is on the other
18 side. And we can't see the whole wall because there
19 is objects and the furnace is never removed to look
20 at it from the other side.

21 What I am saying is there is heavy burn
22 damage on the wall in that area. It was burned
23 through.

24 Q It's burned through, but the other side
25 of that wall would be the side that faces the

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1 furnace, right?

2 A The other side of that could be the
3 furnace. It could be a wall --

4 We can't tell from the photograph.

5 Q I'm sorry.

6 Your theory was that this was a fire in
7 the furnace that spread through the wall of the
8 compartment of the furnace into the closet, right?

9 A That's one potential scenario.

10 Q Okay.

11 And this photograph does not show that
12 anything burned through the wall of the closet, does
13 it -- I'm sorry -- burned through the wall of the
14 furnace.

15 A The wall of the furnace is metal. So,
16 fire wouldn't burn through metal.

17 Q So, the interior wall that the furnace
18 compartment was in, in that little closet, was lined
19 with metal?

20 A No. You just said that it burned
21 through the wall of the furnace. The furnace the
22 furnace wall would be made out of steel.

23 Q Okay.

24 But the compartment that the furnace
25 was in was made out of the same material that the

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1 rest of the walls were made out of, correct?

2 A That wasn't documented.

3 Q Well, did you assume that they were
4 made of something else?

5 A No.

6 Q When you look at this photograph that
7 you've identified, the one that, I believe, is HP
8 00463, there clearly is another wall behind the burnt
9 part of the closet, right?

10 A There is something behind that. What
11 that is, I don't know.

12 Q And whatever it is, it is not burnt?

13 A At least the limited portion that you
14 can see in this picture is intact. We can only see a
15 limited portion of it where the inner wall of the
16 closet is burned through.

17 Q So, is this picture to you evidence
18 supporting your theory that the furnace caused the
19 fire?

20 A That it's a potential cause. But as I
21 describe in my report, there isn't enough evidence to
22 determine one way or the other. That the cause of
23 the fire is undetermined.

24 Q But if that were the cause of the fire,
25 are you saying that this photograph supports that

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1 cause?

2 A So, yes. You have severe damage in
3 this area of the closet that's adjacent to the
4 furnace. So, that's something that should be
5 considered.

6 Q Right.

7 But behind the point that is burned is
8 a part that is unburned, which is the part closest to
9 the furnace.

10 Isn't the wall behind the charred wall
11 of the closet closer to the furnace?

12 A So, I said this a few times, we can
13 only see a limited portion of what is behind that
14 burned wall where it's burned through. I am not sure
15 if that's the furnace or if that's an individual
16 wall. We can't see the whole wall. It could be the
17 whole wall. We can't see that whole wall. It wasn't
18 examined.

19 But clearly, if the walls of the closet
20 were completely intact and not fire damaged, there
21 would be less of a possibility or less evidence that
22 the furnace caused the fire in the closet. When you
23 have significant damage to the wall adjacent to the
24 furnace, that's something you need to consider.

25 Q And if you had been able to investigate

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1 the scene, you would have been able to look behind
2 that wall that's charred to see what was behind it?

3 A If I was allowed to do that. As I told
4 you earlier, I wasn't available for the inspection
5 that day. I had another inspection.

6 Q But certainly, Mr. Gorbett was able to
7 do that, right?

8 A I don't know if he was able to do that
9 or if he asked to do that.

10 Q Well, did he take any pictures any
11 close-up pictures of the wall behind the burnt wall
12 in the closet?

13 A I was going to look at that on our next
14 break.

15 Q So, you don't remember him ever taking
16 any pictures?

17 You are saying you have to look for
18 them now?

19 A Correct.

20 Q We will certainly do that.

21 MS. WANEMAKER: We will take it under
22 advisement.

23 Q Well, is there any reason why if you
24 have evidence that the furnace caused the fire based
25 upon pictures that Mr. Gorbett took that you wouldn't

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1 put those in your report?

2 A I didn't put every photograph. There
3 is hundreds of photographs. I didn't put every
4 photograph in my report.

5 Q But if there was a photograph that
6 supported an alternative cause of the fire different
7 than the Allegany fire investigators and
8 Mr. Karasinski and the other investigators that were
9 at the scene found, wouldn't you put that in your
10 report?

11 A I may have. As I've said the cause of
12 the fire is undetermined, is my opinion.

13 Q So, would you agree that the greatest
14 extent of fire damage shown in any photographs that
15 Mr. Gorbett took or any of the other photographs that
16 you looked at for the fire investigators was the
17 inside of the closet?

18 A I would say there is really two areas.
19 Above and near the couch and near and in the closet.

20 Like, the firefighters reported that
21 when they responded, I think they had to fight fire.
22 There is glowing in the ceiling above the couch and
23 had to extinguish that.

24 Q So, you are saying that the area of the
25 couch showed as much fire damage as the area of the

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1 closet?

2 A Correct. It showed a similar amount of
3 damage.

4 Q And that would be floor to ceiling?

5 A Well, part of the wall was protected by
6 the couch. But the couch and then the ceiling above
7 it.

8 Q So, you believe the couch was on fire,
9 but it protected the wall?

10 A A portion of the wall.

11 Q What about the lower part of the couch?
12 Did that go on fire?

13 A No. It only burned down to
14 approximately the bottom of the seat.

15 Q Where are the electrical mechanisms
16 located in a couch like that?

17 In the back or in the lower part of the
18 couch that didn't burn?

19 A Well, there would be multiple
20 locations. Some for doing things like reclining
21 would typically be located in the lower portions.
22 Heating elements, or heating as described had heating
23 elements, would be in the back and in the seat area.
24 It was also mentioned in the report there is a candle
25 adjacent to the couch. So, an open flame could have

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1 been another ignition source.

2 Q Is it your opinion that somehow the
3 candle --

4 Which is upright in the picture that
5 you saw, correct?

6 A That's correct.

7 Q That somehow jumped to the couch and
8 started the fire and that's what the cause of the
9 fire was?

10 A No. It's not my opinion that the
11 candle jumped, no.

12 Q Well, did you come to the opinion that
13 somebody knocked the candle over and a firefighter
14 straightened it back up and put it back in its normal
15 position?

16 A There is a few issues related to the
17 candle. Ms. Marcellin testified that she didn't use
18 candles; all the candles were in -- put away in a
19 drawer or something like that. And I think the other
20 fire investigators said there weren't candles where
21 clearly there are candles there that were present. I
22 don't know if there were other candles near the
23 couch. There were humans there at the time of the
24 fire. Someone could have knocked something. There
25 was a cat in the house and could have knocked

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1 something or knocked another burning object into the
2 couch.

3 Q So, your theory, then, is that
4 Ms. Marcellin lit a candle in the living room and it
5 somehow got knocked onto the couch while she was
6 sleeping?

7 A I didn't say that, no.

8 Q Well, how would the candle get lit if
9 Ms. Marcellin didn't light it?

10 A Ms. Marcellin could have lit it.
11 Someone else could have lit it. But she testified
12 she doesn't have candles and there is a candle there.
13 So, there is inconsistencies.

14 Q It might be inconsistent, but what
15 evidence is there that the candle started the fire?

16 A We have a candle adjacent to one of the
17 most heavily burn-damaged areas in the house.

18 Q But the candle is a candle in a jar
19 that is sitting upright on the table and shows no
20 signs of ever tipping over or causing any fires on
21 the table, does it?

22 A I don't know that I agree with that.

23 Q Okay.

24 Tell me what evidence that you are
25 referring to by looking at photographs that you can

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1 say that there is evidence that the candle caused the
2 fire?

3 A So, as I described in my report, at the
4 end of the day the cause of the fire is undetermined.
5 These are potential causes that I am discussing.

6 Q So, they are possible?

7 A Correct.

8 Q You are not saying that --

9 A They are causes that can't be ruled
10 out.

11 Q Okay.

12 So, you are saying they're possible,
13 but they are not probable.

14 You come to no conclusion as to the
15 probable cause of the fire; only possible causes?

16 A The cause of the fire is undetermined,
17 is my opinion.

18 Q Which means that you can't find
19 anything that you believe is a probable cause of the
20 fire?

21 A Correct.

22 Q Okay.

23 What about arson?

24 Is that a possible cause of the fire?

25 A It is.

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1 Q And is that another possible cause,
2 then, that Ms. Marcellin or someone else purposefully
3 set the fire?

4 A That's a potential cause that you
5 should consider in any investigation.

6 Q Is it more or less likely than a
7 candle?

8 A A candle would be one method of
9 intentionally starting a fire.

10 Q Okay.

11 So, you believe the candle theory,
12 then, is an arson theory?

13 A It could be arson. It could be
14 accidental.

15 Q So, you think Ms. Marcellin knocked
16 over the candle and just didn't mention it to
17 anybody?

18 A I don't believe that's something I
19 stated, no.

20 Q Now, Ms. Marcellin testified that she
21 smelled smoke and walked through the living room and
22 saw a glow in the office, correct?

23 A I believe that's --

24 I mean, she gave a number of different
25 statements that are inconsistent. I believe that's

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1 what she described in her deposition, yes.

2 Q Okay.

3 Let's take a look at what she described
4 to the fire investigators the night of the fire, and
5 that's still in the same document we started. Okay?
6 I will tell you what page.

7 If you turn to look at 410?

8 Do you see the recitation of the
9 interview Mr. Luckey did of Ms. Marcellin in the
10 hospital on the night of the fire, morning of the
11 fire?

12 It's on page --

13 A On 411 are his handwritten notes of the
14 interview.

15 Q Okay.

16 Look at either one.

17 So, he provided a fuller description of
18 what she said in his typewritten note than he did in
19 his handwritten note, correct?

20 A That's correct.

21 Q Is it your assumption, then, that the
22 typewritten note is not accurate and only the
23 handwritten note is accurate?

24 A All I know is that they are slightly
25 different.

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1 Q Okay.

2 Are you saying that -- that the
3 difference in his handwritten notes from his
4 typewritten notes is somehow attributable to Ms.
5 Marcellin being inconsistent?

6 A I don't know if he interviewed her more
7 than once. I am just saying that there is --

8 As you mentioned, his typewritten
9 notes, which is a report dated February 21st, are
10 different than his handwritten notes that I think
11 were taken on the day of the fire.

12 Q Well, you reviewed the Matterport
13 photographs, right?

14 A I did.

15 Q And that allows you to actually see the
16 whole layout of the house and see the route that one
17 would have to take from the master bedroom to the
18 office?

19 A Correct.

20 Q And that leads you right through the
21 living room into that hallway to the office, correct?

22 A Correct.

23 Q So, is it your assumption, then, that
24 Ms. Marcellin walked through that living room and the
25 couch was on fire as the ignition source of the fire

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1 and she just didn't see that?

2 A No. I think in my report when I am
3 describing the couch I described that she didn't say
4 that that's where the fire started, so. I think I
5 acknowledge that. I mean, there is inconsistencies in
6 her statements so you don't know what portions you
7 can believe and what portions you can't.

8 But I do note in my report that, you
9 know, based on her testimony she says she walked by
10 the couch and she didn't note the fire there. She
11 noted a fire in the office. So, I do note that in my
12 report.

13 Q Right.

14 So, you would have to assume that she
15 either lied or she just completely missed the fire if
16 your theory that the couch caused the fire was true?

17 A No, I don't have any opinions about
18 whether she is lying or not lying. Just whether or
19 not the information is correct or incorrect. There
20 is inconsistencies in her testimony. I have no
21 opinions about whether she is lying or not lying.

22 Q So, is it your experience as a fire
23 investigator that witnesses are always completely
24 consistent in every aspect of their recollections?

25 A No. That's why you compare their

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1 testimony to other physical evidence.

2 Q (Overlapping audio)

3 A (Overlapping audio)

4 Q Go ahead.

5 I'm sorry.

6 A And other evidence that you have.

7 Q So, the testimony of Carol Marcellin is
8 certainly not consistent with the candle causing the
9 fire. The only physical evidence you find is the
10 fact that the couch, which was near the candle,
11 eventually caught on fire, right?

12 That's your evidence?

13 A No. It's much more than that.

14 The couch is very significantly burned.
15 Has a lower level burn than other objects around it.
16 It is more very severely burned than a few different
17 chairs in the room. It is unique that it's one of
18 the two areas in the home with the most significant
19 burn damage and low burn damage.

20 Q Did Mr. Gorbett take a bunch of
21 pictures of the candle and the couch and the
22 mechanisms in the couch that could have initiated the
23 fire?

24 A I don't believe he did, no.

25 Q If you look back to 410 of Exhibit 6,

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1 which is the fire investigation, they describe the HP
2 laptop computer on the pull-out shelf of the computer
3 cabinet which we referred to as the armoire as well,
4 correct?

5 A Correct.

6 Q And it says that:

7 "The FI team saw unusual looking damage
8 to the area between the keyboard and the
9 screen."

10 And that would be the area that was
11 exposed from the battery compartment, correct?

12 A I am not sure what you --

13 The last comment was?

14 Q Well, the battery compartment was
15 underneath the surface and there was an opening into
16 the battery compartment that was located above the
17 keyboard and before the screen on the right side of
18 the laptop.

19 Do you recall that?

20 A Yes.

21 Q And that is the unusual looking damage
22 that they are referring to?

23 Do you agree?

24 A I would assume that that's what they
25 are referring to.

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1 Q Then they say:

2 "We picked up the HP laptop and
3 observed additional damage to the paper
4 under the battery cover area. We also
5 observed damage to the battery cover and
6 battery located in the laptop. This area
7 of the battery cover showed an
8 inconsistency with damage from fire
9 spread."

10 Do you agree with that conclusion or
11 disagree with that conclusion?

12 A I disagree with it.

13 Q And they say that:

14 "The bottom of the laptop should have
15 been a protected area."

16 What does that mean?

17 A I think they are referring to a fire
18 where the radiant heat level or, you know, the hot
19 heat level at the top of the ceiling, a hot layer,
20 that it would be causing radiant heat transfer to the
21 top of the laptop but not to the bottom of the
22 laptop. So, they would not expect to see fire damage
23 on the -- of the laptop. But you have to consider
24 the fuel sources involved. You know, a charged
25 lithium-ion battery is a significant fuel source, as

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1 it's heated and goes into thermal runaway it's going
2 to cause more significant fire damage than the other
3 materials around it.

4 Q So, just to make sure I understand.

5 In your opinion, the damage, the
6 unusual damage to the top of the laptop and to the
7 bottom of the laptop that should have been in a
8 protected area, was not caused by radiant heat but
9 was caused by the heat generated by the thermal
10 runaway?

11 A Correct. You have a combination of
12 heating that is occurring there. You have the heat
13 from the radiant energy as well as from the thermal
14 runaway of the batteries.

15 Q And we'll get to the hypothesis that
16 was reached by the fire investigators and by
17 Mr. Karasinski that is different than yours.

18 But there's two.

19 Yours is that the thermal runaway was
20 caused by a fire that started somewhere in an unknown
21 origin that caused the cells to go into thermal
22 runaway. And all the other fire investigators
23 determined that it was the laptop batteries, cells,
24 or one of them, that went into thermal runaway that
25 caused the fire, correct?

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1 Those are the two competing theories
2 that we are talking about?

3 A That's correct. I don't agree with the
4 characterization that all the other fire
5 investigators.

6 Q Well, Mr. Karasinski came to that
7 conclusion, correct?

8 A That's correct.

9 Q And you are not aware of what Mr.
10 Gorbett concluded because you never talked to him and
11 you only looked at his photographs?

12 A That's correct.

13 Q And you also haven't talked to the
14 NEFCO insurance fire investigator who was there,
15 correct?

16 A That's correct.

17 Q But what you do know is that the
18 Allegany fire investigators -- the four of them as
19 summarized by Mr. Luckey -- says:

20 "Based upon our observation and ruling
21 out other probable causes, it is our
22 hypothesis that the cause of fire is the HP
23 laptop."

24 That's what they stated in their
25 report?

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1 A Right. They said that that's their
2 hypothesis.

3 Q Right.

4 Now, the word "hypothesis" under the
5 921 terminology has a specific meaning, correct?

6 A Well, I think it's a general word
7 that's used in scientific methods. You form a
8 hypothesis and then you test the hypothesis.

9 Q And then, you come to a final
10 hypothesis?

11 A Or a final conclusion, if you can.
12 You can't always come to a final
13 conclusion.

14 Q No. I am just talking about 921 talks
15 about reaching a final hypothesis. We can look up
16 the section, if you want to.

17 Do you agree with that or you are not
18 familiar with 921 when it comes to cause and origin?

19 A I am familiar with NFPA 921.

20 Q Are you familiar with the section that
21 says "arriving at final hypothesis"?

22 A Yes.

23 Q Okay.

24 And that is the end of the
25 investigation process under that methodology is

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1 reaching a final hypothesis, correct?

2 A No. I mean, sometimes you can't reach
3 a final hypothesis.

4 Q So, either you reach a final hypothesis
5 or you don't reach any conclusions, right?

6 Those are the two options under 921?

7 A Your conclusion may be that the cause
8 of the fire is undetermined.

9 Q Right.

10 But if you have a determination of what
11 you think caused the fire, then it's called a final
12 hypothesis under 921?

13 Am I correct on that or are you going
14 to tell me I am wrong?

15 A If it reaches certain criteria of the
16 confidence of the opinion.

17 Q Right.

18 In other words, that is the highest
19 level of confidence that's expressed is called the
20 final hypothesis under 921?

21 A I mean, it could be a range of
22 contents. It could be more likely than not. It
23 could be --

24 You know, there's a higher standard in
25 criminal investigations. So, there is a variety of

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1 different levels of confidence.

2 Q You are saying that there is a variety
3 of different levels of confidence that are noted in
4 921 under the causation chapter?

5 A It's noted in NFPA 921, yes.

6 Q You are saying that the criminal
7 standard is included in that?

8 A I believe so.

9 Q Okay.

10 We will look at that after the break.

11 MS. WANEMAKER: Speaking of which, I
12 don't want to interrupt you, but when are
13 you thinking of in terms of a break for
14 lunch? We were going about an hour and 12
15 minutes since last break.

16 MR. SCHWARZ: Let's break at 1.

17 MS. WANEMAKER: Okay.

18 MR. SCHWARZ: Once we go off the
19 record, we can talk about how long.

20 MS. WANEMAKER: Sounds good.

21 Q The Allegany fire investigators then
22 said:

23 "The HP laptop battery or components
24 near the battery caused the battery to
25 overheat and explode, sending sparks and

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1 flammable material that ignited light
2 weight fuels in the office area of the
3 computer cabinet or closet."

4 That is what they concluded that you
5 disagree with, correct?

6 A They say two possibilities here. The
7 HP laptop battery or components near the battery
8 caused the battery to overheat and explode. So, I
9 don't know what they mean by components near the
10 battery. I mean, certainly I agree that components
11 near the battery got heated by an external fire and
12 ultimately caused the batteries to go into thermal
13 runaway. They didn't reach the conclusion that the
14 laptop batteries on their own necessarily went into
15 thermal runaway.

16 Q And so, you interpret that statement to
17 say that the fire started somewhere else and from the
18 heat from that fire that started somewhere else
19 caused thermal runaway in the battery component?

20 A I am saying it could mean a variety of
21 things. It could mean that the batteries went into
22 thermal runaway on their own due to some internal
23 defect. It could mean that a component in the
24 computer malfunctioned and overheated and caused the
25 battery to go into thermal runaway. That seems to be

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1 their hypothesis. It could also mean that a
2 component was heated by something else that then
3 caused the battery to come into thermal runaway.

4 Q Which part of their statement supports
5 your last conclusion that an external fire could have
6 caused the thermal runaway?

7 Which part of that paragraph that they
8 sum up their final hypothesis supports your
9 conclusion that this could have been a fire of
10 unknown origin that actually set the laptop on fire?

11 A They say:

12 "Or components near the battery caused
13 the battery to overheat and explode."

14 The radiant heat that heated up the --

15 In my opinion, the radiant heat that
16 heated up the plastic then led to the battery going
17 into thermal runaway. I don't know that that's what
18 they were envisioning, but it is consistent.

19 Q So, when they say the cause of the fire
20 is the HP laptop, you interpret that to mean that the
21 fire started elsewhere and set the HP laptop on fire?

22 That's how you interpret their
23 conclusion there?

24 A No.

25 In that sentence, it says:

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1 "The HP laptop battery or components
2 near the battery caused the battery to
3 overheat and explode."

4 That's what I am referring to.

5 Q Right.

6 But the sentence before that says:

7 "Based upon our observation and ruling
8 out other probable causes, it is our
9 hypothesis that the cause of the fire is
10 the HP laptop."

11 Is that ambiguous to you?

12 A No. I mean, that's a separate
13 sentence. I see that sentence as well.

14 Q And then the next sentence is a follow
15 on sentence that describes why they came to that
16 conclusion.

17 A I think it's providing more detail of
18 how they believe the HP laptop started the fire.

19 Q Right.

20 So, my question is what about that --
21 the combination of those two sentences -- allows you
22 to conclude that they were also saying that an
23 external fire from unknown -- from some unknown
24 source from some unknown location spread to the
25 office and then caused the laptop to go into thermal

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1 runaway?

2 A Now, you are asking me a different
3 question about those two statements. I agree those
4 two statements are not consistent with that.

5 Q Okay.

6 Thank you.

7 MR. SCHWARZ: Why don't we take a
8 break.

9 VIDEOGRAPHER: The time is 12:57 p.m.
10 We are going off the record.

11 (Whereupon, a short break was taken)

12 VIDEOGRAPHER: The time is 1:22 p.m.
13 We are back on the record.

14 Q Mr. Myers, if you can now turn to your
15 report, which we marked as Exhibit 4, I think. And
16 it's at tab 17.

17 A Yes.

18 Q And if you could turn to page 6 of your
19 report?

20 A All right.

21 Q Now, you got a section entitled, "2.2
22 Incident Timeline."

23 And in that section you indicate that
24 Ms. Marcellin started the Norton Antivirus Software
25 on the notebook at about 9:30 p.m. leaving it plugged

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1 in and running when she went to sleep.

2 Correct?

3 A Correct.

4 Q Did you do any research on whether
5 running Norton Antivirus software can cause the
6 computer to heat up?

7 A Not specifically, no.

8 Q Did you review Ms. Marcellin's
9 testimony in preparing for writing your report?

10 A I did.

11 Q And did you find in there what
12 Ms. Marcellin said was her practice typically when
13 she finished using her computer?

14 A Yes.

15 Q And what was that?

16 A That she would close it up and wrap the
17 cord around it, I guess, partially out of the concern
18 that the cat would chew on the cord.

19 Q So, based upon Ms. Marcellin's
20 testimony anyway, this was the first or one of the
21 first times she ever left the computer running and
22 plugged in and left it, correct?

23 A Yeah. I think she testified this was
24 the first time she had done that.

25 Q All right.

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1 And did you consider that in light of
2 the subsequent information you learned that this
3 battery pack had no overvoltage, over temperature,
4 overcharge protection?

5 Did you consider that as a fact when
6 you were evaluating whether this battery pack went
7 into thermal runaway because of the internal issues
8 with the battery pack or because of external fire
9 source?

10 A Yeah. I considered that to mean
11 typically, as we discussed earlier, a battery is
12 going to be more susceptible to thermal runaway, the
13 higher state of charge and when it's being -- or when
14 it's being charged. So, if it's on all night, you
15 would expect it to be fully charged by the time of
16 the fire.

17 Q And also, without the protection if it
18 were to overheat, there would be nothing to stop the
19 charge, correct?

20 A There wouldn't be the same protections
21 that would be in an HP battery, that's correct.

22 Q Are there any other protections against
23 overheating batteries other than the safety devices
24 that were intended and were not implemented on this
25 battery pack?

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1 A Well, within the laptop itself would
2 have some protection. I think you just asked me if I
3 looked at the impact of running Norton Antivirus.
4 You know, there is protection on most notebooks that,
5 you know, if the processer is above a certain
6 temperature, it will shut down. So, there is
7 protections on a laptop, a notebook computer.

8 Q What is your understanding of what
9 temperatures that would require for this particular
10 model?

11 A I don't know those. For this specific
12 case, those are issues that Mr. Galler or Dr. Horn
13 would be more familiar with.

14 Q Okay.

15 Now, on page 7 of your report, and you
16 refer to figure 5. You have a box around a portable
17 phone that was in the spare bedroom that had the door
18 closed that was on the other side of the office where
19 the fire was located, correct?

20 A That's correct.

21 Q And on page 7 --

22 A I mean, I guess I should correct that.
23 A portion of the --

24 Yeah. That's correct.

25 Q So, you mention that this cordless

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1 phone that you thought was available for
2 Ms. Marcellin --

3 And my question is what was your basis
4 that the cordless phone was plugged into anything and
5 actually worked?

6 A There is a picture there of a cordless
7 phone in a charging station.

8 Q Right.

9 But does the picture show that it was
10 hooked up to a landline?

11 A Typically, a cordless phone would be
12 connected to a wireless base station that is
13 connected to the landline.

14 Q Okay.

15 Were you able to tell that this was one
16 of those cordless phones that had a Bluetooth
17 connection to some station?

18 A They don't typically use Bluetooth.
19 They are typically wireless.

20 Q Okay.

21 So, in other words, what information do
22 you have that this was this type of phone and what
23 was your information that it actually was hooked up
24 to anything at the time of the fire?

25 A That photograph showing the phone

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1 there.

2 Q All right.

3 So, what would the difference in that
4 photograph be if that was a phone that was not in use
5 at the time, it was not hooked up to any landline?

6 What would it look like that it would
7 be different than it looks like in that photograph?

8 A It wouldn't appear different.

9 Q So, what testimony are you relying on
10 to come to the opinion that that phone was in working
11 order on the night of the fire?

12 A So, I mean --

13 What I say in my report is spelled out
14 on the bottom of the second paragraph on page 7.
15 That's what I state in my report.

16 Q Well, you say that the photograph is
17 inconsistent with Ms. Marcellin's testimony that the
18 only landline phone was in the office.

19 That's what you said, correct?

20 A Correct.

21 Q And that means you came to a conclusion
22 that this phone was working at the time because she
23 said that the only landline that was working was in
24 the office.

25 So, you came to a conclusion that she

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1 was being inconsistent.

2 And my question is what is the basis of
3 your conclusion that this was a working landline?

4 A So, what I state in there is that there
5 is a cordless phone in a charging station in the
6 spare bedroom.

7 Q But then, the next sentence --

8 A And that it would have been accessible.

9 Q Right.

10 Well, it could have been accessible,
11 but if it wasn't connected to anything it wouldn't
12 have done her much good, right?

13 A That's correct.

14 Q So, when she said the only landline
15 phone was in the office, did you interpret that to
16 mean the only landline phone that would actually
17 allow her to make a phone call or just the only
18 landline phone that was in the house entirely?

19 A I interpreted that to mean a phone that
20 would allow her to make a phone call other than her
21 cell phone. Historically, homes had both landlines
22 and people also have cell phones.

23 Q So, in other words, what led you to the
24 conclusion, other than this photograph, that this
25 phone was capable of making a phone call on that

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1 night connected to a landline?

2 A This photograph showing the cordless
3 phone in a charging base station.

4 Q Right.

5 And is it shown whether it's plugged
6 in?

7 A I can't see from this specific photo in
8 this -- in the binder.

9 Q Are you saying that these cordless
10 phones did not frequently actually have direct
11 connection to the phone connection at the base?

12 MS. WANEMAKER: Can you rephrase that?
13 That was a little confusing to me.

14 MR. SCHWARZ: Sure.

15 Q So, the charging station that you are
16 referring to also in some of these cordless phones,
17 at least the ones I've ever been involved with, are
18 directly connected to the receptacle on the wall that
19 provides you with the landline connection?

20 A That's not --

21 Q Do you recall that?

22 A That's not what I am familiar with. I
23 also owned cordless phones over the years.
24 Typically, there is a base station that's a larger
25 unit where you can also put a phone, but then there

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1 is these smaller charging stations that you would
2 have additional phones that would also communicate
3 with that base station. To me this appears to be one
4 of those smaller charging stations.

5 Q And so, where was the base station that
6 you assumed located?

7 Did you find a picture of that?

8 A She referred to it as being in the
9 office.

10 Q She referred to a base station being in
11 the office?

12 A She referred to a landline being in the
13 office.

14 Q Right.

15 So, are you assuming that what she was
16 referring to is the base station for multiple
17 cordless phones that you are assuming?

18 Is that what your assumption was?

19 A That's correct.

20 Q And what was that assumption based on?
21 Your experience with cordless phones?

22 A Her testimony. The photograph of the
23 cordless phone. And the familiarity with cordless
24 phones.

25 Q What model is this?

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1 A I can't see from the photograph in the
2 binder.

3 Q And what in the photograph provides you
4 with information that this is the type of cordless
5 phone that you are familiar with versus the type that
6 I described that I am familiar with?

7 How do you distinguish the two?

8 A I am not sure what type you are
9 familiar with, but I've seen cordless phones for
10 probably 30 or 40 years. There is a variety of
11 different types. That is what I am familiar with.

12 Q The answer is that you can't tell by
13 the photograph what the model is, what the type of
14 cordless phone it is or whether it requires a base
15 station, as you refer to it?

16 A As I said, based on viewing the
17 photograph, to me it appears that it's a cordless
18 phone that's in a charging station that would require
19 another base station attached to the -- to a
20 landline.

21 Q The office contents were well described
22 in multiple reports and there are hundreds of
23 pictures of the office.

24 Did you see a picture of the base
25 station that you are referring to that you assumed

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1 existed?

2 A I don't recall that, but I also didn't
3 see a picture of the compact computer that was
4 allegedly in the office.

5 Q Well, you didn't see a picture of a lot
6 of things, but I am asking you did you see a picture
7 of this base station that you assume existed that
8 gave you the conclusion that Ms. Marcellin's
9 testimony is inconsistent?

10 A Well, if there is not a landline in
11 that office, landline phone in that office, that that
12 would be inconsistent with her testimony.

13 Q Oh, the base station is what we are
14 talking about.

15 In other words, your assumption is that
16 the phone in the bedroom that you've depicted here
17 was not connected directly to a landline but was
18 connected wirelessly to a base station.

19 That's your assumption, correct?

20 A Right. I don't recall seeing a picture
21 of any phone in the office, so.

22 Q And what was the purpose of your
23 pointing this out in your report; this what you
24 believe to be an inconsistency based upon these
25 assumptions that you made?

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1 Was it to discredit Ms. Marcellin's
2 credibility?

3 A No. NFPA 921 directs you that you
4 should compare all evidence to other evidence and to
5 examine witness statements and compare those to other
6 evidence. And so, that's what I attempted to do in
7 my analysis; review her testimony and review what is
8 consistent with other facts. Obviously, the more
9 inconsistencies there are, you know, then the less
10 reliable the testimony becomes.

11 Q So, based upon your multiple
12 assumptions as to the -- whether this phone was
13 actually working, you've made this a factor in
14 considering the credibility of Ms. Marcellin's
15 testimony about when she woke up from the fire and
16 what she observed?

17 A This is one of several areas where
18 there were inconsistencies in her testimony.

19 Q Okay.

20 And so --

21 A I didn't make a determination based on
22 a, you know, a single inconsistency.

23 Q But this was one of the alleged
24 inconsistencies that you used to basically disregard
25 some of her testimony?

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1 A No, I didn't disregard her testimony.
2 I considered her testimony.

3 Q What --

4 A I referred in my report about referring
5 to her testimony.

6 Q Which parts of her testimony, then, did
7 you determine were not credible that were related to
8 your theory that either the furnace or the candle or
9 the couch caused the fire?

10 A There were a number of things in her
11 testimony that were inconsistent. For instance, her
12 testimony in her deposition is not consistent with a
13 later declaration that was filed at the same time as
14 rebuttal reports. There is significant
15 inconsistencies in that declaration with her previous
16 deposition testimony. There were things that were --

17 Q Let me stop you there.

18 Tell me what those inconsistencies
19 were, please.

20 A So, for instance, the order in which
21 she said she did things. In her deposition she said
22 that she first started walking to the office, saw
23 a -- saw a glowing fire, heavy smoke coming out of
24 the office. Then went back to the kitchen to get a
25 fire extinguisher. Then went back to the office and

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1 saw eruptions coming from the laptop. In her
2 declaration, the order of those things are reversed.
3 Her declaration also describes things that aren't
4 consistent with the physical evidence. On the one
5 hand, she can't go into the office because of the
6 fire and says that she can't -- you know, she can't
7 go into the office, but yet she can see into the
8 closet and see that there is no fire or smoke into
9 the closet even though the closet wouldn't be visible
10 unless you entered a significant distance into the
11 room. Actually that statement is inconsistent with
12 the Plaintiff experts saying that the fire started in
13 the closet.

14 There were inconsistencies in her
15 testimony about candles that we discussed earlier
16 that she said she didn't use candles. And all the
17 candles were in the drawer or something like that. I
18 am trying to think what else. I mean, there were
19 several inconsistencies.

20 Oh, there was an inconsistency that she
21 said that Mr. Hollowell was on the floor and that he
22 wouldn't be able to get up from the floor. The
23 photographs show patterns, a protected region of
24 where he would have been on the bed with his feet on
25 the ground, consistent with where first responders

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1 found him. So, there were a number of different
2 issues that -- and her testimony that were
3 inconsistent with other fac -- with itself and other
4 factors.

5 Q Let's take them sort of in reverse
6 order.

7 What was your understanding of
8 Mr. Hollowell's ability to get himself out of bed and
9 into a wheelchair by himself without help before the
10 fire?

11 A That he would typically require
12 assistance.

13 Q That's your testimony?
14 That's your recollection of --

15 A That was my recollection.

16 Q Okay.

17 And that's what your assumption is
18 based on, that he couldn't have gotten himself up off
19 the floor and onto the bed?

20 A No. Ms. Marcellin's testimony was that
21 he wouldn't be able to get himself off of the floor
22 and onto the bed. I am not assuming anything.

23 Q So, that's basically her opinion of
24 what he could do, and not necessarily a fact, right?

25 A That was her testimony. If she is

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1 incorrect about that, that's another example of her
2 testimony being non reliable.

3 Q Okay.

4 So, you view that as a major
5 inconsistency, then, the fact that Mr. Hollowell was
6 able to get himself up on the bed contrary to her
7 opinion as to whether he could pull that off?

8 A So, there were several inconsistencies.
9 I named a few. There is others that I am just not
10 recalling here but --

11 Q Okay.

12 A But that statement, you know, either it
13 was inconsistent about whether or not he could get
14 himself off the floor, if that was what really
15 happened. Or he actually wasn't on the floor and he
16 was really in the bed where he was found. There was,
17 you know, other issues of that that were
18 inconsistent. She talked about throwing the covers
19 off the bed and her cell phone flying. But if you
20 look at the bed afterwards, the covers aren't thrown
21 off the bed. The one side of the bed, the covers are
22 actually neatly on the bed and they are just pulled
23 back on the side where Mr. Hollowell was found.

24 Q And that photograph was taken after the
25 body was removed, correct?

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1 A That's correct.

2 Q And what is your understanding of what
3 happened between the time she threw the covers off
4 and when his body was removed from the bed and they
5 took the pictures?

6 A So, she --

7 It depends on whether you are referring
8 to her declaration or if you refer to her deposition.

9 Q I am talking about what happened --

10 Ms. Marcellin never went back into the
11 bedroom after she finally crawled out of the house,
12 correct?

13 A After she crawled out of the house, no.
14 She drove away and placed a call to OnStar and
15 testified that she drove back to the end of the
16 driveway and sat at the end of the driveway.

17 Q So, after she did that, and the firemen
18 came in. They helped put the fire out. They found
19 Mr. Hollowell on the bed. They removed his body.

20 Right?

21 A My understanding is one of the first
22 things they did was find his body on the bed, removed
23 him into the garage, so first responders could
24 perform CPR on him.

25 Q Right.

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1 So, the condition of the bedroom, then,
2 since Ms. Marcellin left it could conceivably have
3 been changed before the photograph was taken,
4 correct?

5 A I am not sure what you are asking.

6 Q So, in other words, when the
7 firefighters went in to remove the body, do you think
8 that they were particularly --

9 A Made the bed or?

10 Q Is your view of the picture that the
11 bed is made?

12 Is that what you are saying?

13 A I don't think they made the other side
14 of the bed. I mean, you could see obviously they
15 removed the body. You can still see the visible
16 witness marks from where the body was. So, it
17 appears that that's consistent with -- relatively
18 consistent to how it was when they removed the body.

19 Q So, from all of this, you've determined
20 that you think Mr. Hollowell was always in the bed
21 and she never was in the bed?

22 A I am sorry.

23 I didn't --

24 Q You --

25 A -- hear what you said.

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1 Q You didn't believe that he was ever on
2 the floor?

3 A You just asked me two different
4 questions.

5 Q Okay.

6 Well, I am asking the second one.

7 Is it your conclusion as a fire
8 investigator that Mr. Hollowell was never on -- more
9 probably than not was never on the floor?

10 A My opinion is that her statements are
11 inconsistent with the facts. You know, either --

12 Q You --

13 A Either he was never on the floor or
14 either he was able to get off the floor, what she was
15 incorrect about.

16 But looking at the witness patterns on
17 the bed, you know, it looks like for most of the time
18 that there was soot deposition that he was on the bed
19 because there is a protected region that doesn't have
20 soot.

21 Q Then if you look at your Figure 6,
22 then, you are saying that your Figure 6 shows that
23 the bed is made at least on one side?

24 Is that how you interpret that?

25 A I think Figure 7 shows a better view of

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1 that.

2 Q And that shows that --

3 You believe that's where the bed is
4 made there?

5 A It's relatively neat. It doesn't
6 appear that the covers were thrown off.

7 Q Okay.

8 If you turn to page 14?

9 A Okay.

10 Q And on page 14, and I think referring
11 to Figure 11, you refer to a lines of demarcation,
12 correct?

13 A Correct.

14 Q And if you look at the picture, it
15 appears that relatively -- around the room there is a
16 line between where the paneling looks brown and the
17 paneling looks charred or at least has soot damage,
18 correct?

19 A Correct.

20 Q And that's the line of demarcation you
21 are referring to?

22 A Correct.

23 Q Now, when in the course of the fire do
24 you believe that line of demarcation got to its
25 lowest point?

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1 When it first started?

2 A No.

3 Typically, it would --

4 You know, the testimony was that the
5 fire had extinguished itself by the time the
6 firefighters arrived. So, there would have been, you
7 know, various phases of the fire. But typically, you
8 have a first phase of fire growth where smoke is
9 accumulating or a hot layer is forming and lowering
10 down. And then, at some point it reaches its lower
11 level before the intensity of the fire decreased.

12 Q So, it would be at the maximum
13 intensity of the fire in the house, correct, or at
14 least in that compartment?

15 A I mean, near that time. Not
16 necessarily at that absolute time.

17 Q When in the sequence of events do you
18 think that the thermal layer got to that point where
19 it reached the line of demarcation?

20 A I am not sure I understand your
21 question.

22 Q So, do you think that that had already
23 occurred at the time that Ms. Marcellin first
24 observed the laptop ejecting parts of batteries?

25 A So, you know, it's going to depend on

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1 where the fire started and what sequence of events
2 that actually occurred.

3 Q Right.

4 In other words, you reached the opinion
5 that the thermal layer ignited the battery pack and
6 put it into thermal runaway.

7 So, my question is when in the course
8 of events did the thermal layer get to the level of
9 line of demarcation?

10 Was it at the time that Ms. Marcellin
11 discovered the fire, sometime before that or sometime
12 after that?

13 A So, as I said, it's going to depend on
14 what actually happened in the fire, what the sequence
15 of events was.

16 Q Well, what was the sequence of events
17 based on your opinion that the thermal layer and
18 radiation caused the battery pack to overheat?

19 In other words, you must have an
20 opinion that's based upon evidence as to how that
21 happened and when it happened.

22 And in your opinion, it happened before
23 Ms. Marcellin came into the office, correct?

24 A So, it really depends on what the
25 scenario was. There is multiple hypotheses that I

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1 considered. I considered a fire starting in the
2 couch. I considered a fire starting in the closet
3 due to the furnace or some other cause. We talked
4 about that some of Ms. Marcellin's testimony isn't
5 credible. So, you know, are we supposed to trust
6 her testimony? Which version of her testimony are we
7 supposed to be trusting? What she said in her
8 deposition? What she said in her more recent
9 declaration?

10 Q Okay.

11 A Are you asking me to accept the
12 sequence of events that she described in one of those
13 pieces of testimony or one or the other?

14 Q No.

15 I am asking you whatever you decided
16 was credible evidence that allowed you to reach your
17 conclusion that an external fire heated up the
18 battery pack and caused thermal runaway. Whatever
19 facts you used as evidence for that conclusion under
20 your scenario that you said was more probable than
21 not.

22 When did the thermal layer in the
23 office reach the level of the line of demarcation in
24 the office?

25 When in the sequence of events?

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1 How long after the smoke alarm went
2 off?

3 A So, considering a sequence where the
4 fire started in the closet, you would have had a
5 fire, fire growth, a hot level of smoke would have
6 had to bank down from the ceiling. You wouldn't have
7 gotten significant smoke traveling out of the room
8 until the smoke layer went down below the opening for
9 the door.

10 And so, once you have --

11 By the time you have that hot layer
12 coming down, you are providing significant radiation
13 to objects in the room. And so, it's likely that it
14 would have been near that time or before the hot
15 layer reaches its full extent down in the room that
16 you heat up the laptop sufficiently to cause the
17 batteries to go into thermal runaway. If you accept,
18 for instance, the deposition testimony from
19 Ms. Marcellin, you know, you had to have a few things
20 happen. You had to have smoke bank down and migrate
21 all the way to the end of the other end of the
22 building where her smoke detector was activated. She
23 said by that time she can smell smoke in that region.
24 She can smell smoke in the living room, in the
25 hallway. She could see a glowing coming from the

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1 office. So, by that time you have a substantial fire
2 in the office.

3 She then walks back to the -- to get a
4 fire extinguisher. Walked into the office and that's
5 when she sees the batteries going into thermal
6 runaway. So, that's consistent with the scenario of
7 the hot layer forming and banking down and heating
8 objects and then the battery is going into thermal
9 runaway.

10 Q I want to take that apart.

11 So, first of all, what were the height
12 of the ceilings in this building?

13 A They were somewhere around 8 feet or a
14 little less than 8 feet.

15 Q What is the basis of that opinion?

16 A Two things. That's a typical ceiling
17 height, but the Matterport drawings --

18 Mr. --

19 And then, some of the rebuttal reports
20 there is dimensions that were taken with the
21 Matterport.

22 Q Okay.

23 And then, what is the height of the
24 doorjamb in the office that you are saying that the
25 thermal layer would have to come down to that level

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1 before it would escape and go out into the rest of
2 the house, right?

3 A Correct. I am not sure if there is --
4 If you are assuming that the fire
5 starts in that room, yes.

6 Q But that was the assumption you just
7 gave me. So, I am working with that. So, let's just
8 start with that one.

9 So, the height of the doorjamb or the
10 height of the entranceway to the office is
11 significantly above the line of demarcation in the
12 office, correct?

13 A Correct.

14 Q So, once the smoke and the thermal
15 layer get to that level of the height of the doorway,
16 that's when the heat starts to equalize and go into
17 other parts of the house if the door is open, right?

18 A I mean, that's when that hot layer will
19 start traveling to other portions of the building,
20 yes.

21 Q And as it travels to other portions of
22 the building with that door opening, it's going to
23 slow its progression in the office, itself, right,
24 because now you have bigger volume for that heat to
25 go into?

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1 A To some extent. I mean, the hot layer
2 is going to start coming down at a lower level. On
3 the other hand, you have the fire growing in size so
4 you are producing more combustion products.

5 Q So, your theory, then, again, starting
6 with the theory that the fire started in the closet,
7 your theory is that the hot layer was already low
8 enough in the office and exiting out into the hallway
9 but low enough to provide enough radiant heat to heat
10 up the laptop to put the batteries into thermal
11 runaway?

12 That's your theory, correct?

13 A That's correct.

14 Q And so, that thermal layer would have
15 had to be how far from the surface of the desktop or
16 the armoire shelf top where the laptop was to produce
17 enough heat to cause thermal runaway in the laptop?

18 A There is no requirement for it to be a
19 certain distance. Radiant heat transfer doesn't rely
20 on distances between the objects. It's really the
21 view factor between the objects. So, there is no
22 significant change --

23 Q So, the radiant -- the radiant heat
24 that hit the floor would be the same amount of energy
25 as the radiant heat that --

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1 COURT REPORTER: We lost Mr. Schwarz.

2 (Whereupon, a discussion was held off
3 the record)

4 VIDEOGRAPHER: The time is 1:57 p.m.

5 We are going off the record.

6 (Whereupon, a short break was taken)

7 VIDEOGRAPHER: It's 2 p.m.

8 We are back on the record.

9 Q So, what I was trying to question you
10 about, and somewhat inartfully, what is the first
11 scenario about the fire starting in the closet and
12 when the thermal layer would reach a level
13 sufficiently low to cause enough heat to cause
14 thermal runaway. That was the premise we were
15 talking about.

16 Do you recall that?

17 A Yes.

18 Q So, I think what you were saying is
19 that regardless of where the thermal layer was the
20 amount of heat that would be radiated to the laptop
21 and to everything else in the office would be the
22 same?

23 Is that what you said?

24 A Correct.

25 I mean, once it's grown a significant

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1 distance, it is going to be -- what the temperature
2 of the hot layer is. And what the temperature of
3 other objects are. What their emissivity is. What
4 their absorbance is. And the view factor of what
5 they are seeing. So, it's really not the distance
6 that they are separated.

7 Q So, the --

8 You are saying that once the thermal
9 layer forms, let's say, a foot, it goes down a foot
10 from the ceiling, it's going to generate enough heat
11 from radiant energy to heat the laptop sufficiently
12 to cause -- to get through the plastic to get there
13 through the wrapper to get to the battery cells and
14 cause the battery cells to increase in heat
15 sufficiently to cause thermal runaway?

16 A Correct.

17 By the time --

18 You know, based on Ms. Marcellin's
19 testimony, by the time she was to the office, there
20 was a hot layer of smoke that was somewhere between
21 the top of her head and the ceiling.

22 Q Now, did she --

23 That layer of -- heat layer, then,
24 would have had to be transferring radiant heat to
25 her, too, right?

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1 A If she went into the room. I think she
2 said she didn't go into the room.

3 Q Even in the doorway, though, she would
4 have been close enough to experience radiant heat,
5 correct?

6 A Correct.

7 Q If the radiant heat was enough to heat
8 up the laptop batteries to over 100 degrees
9 Centigrade, which you would agree that it has to be
10 somewhere in that range, which is the boiling point
11 of water, right?

12 A Yeah, 100 degrees Celsius is the point
13 of boiling water. Yes.

14 Q So, if it was in excess of that
15 temperature, then there would have been some effect
16 on Ms. Marcellin as she -- even in the doorway,
17 correct?

18 A Correct.

19 I mean, she would be getting less being
20 in the doorway than being inside the room or closer
21 to the closet. And obviously part of it is the
22 duration that you are near that.

23 Q So, you are saying she would have to be
24 in there for a significant amount of time to feel the
25 heat?

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1 A No. The amount that she would feel
2 heat or the amount that her skin would heat up would
3 be a function of how long she was near that or in the
4 room.

5 Q So, it wouldn't be like opening the
6 oven door and the blast of heat from that you feel
7 from that?

8 It would be some gradual process for
9 her?

10 A Well, you know, opening the door, part
11 of that is convection of hot air coming out of the
12 oven in addition to radiation --

13 Q -- temperature --

14 A In addition to radiation. The part
15 that is, you know, the hot air. If you open the oven
16 door with your head right in front of it, you will
17 feel a lot more heat than if you open the door away
18 from it and then get in front of the oven.

19 Q So, let's take your other theories that
20 the couch turned on fire from the candle or from some
21 mechanism that you postulate it could have gone on
22 fire from.

23 When does the thermal heat layer in the
24 office develop if the couch started the fire?

25 A So, then, you would be building up

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1 smoke in the family room or living room. Smoke would
2 have to go, you know, down the hallway and bank down
3 below the height of that entry and then start going
4 into the -- into the office and building up in the
5 office and igniting materials. It's sort of the
6 reverse of scenario if you are assuming the fire
7 starts in the closet and the couch later ignites due
8 to build-up of hot layer from the office building up
9 in the family room.

10 Q So, if that scenario --

11 That's one of your possible theories,
12 right, that the couch started the whole thing?

13 A Correct.

14 Q And that would require --

15 If the living room was the compartment
16 where the fire began, then a thermal heat layer would
17 have developed in the living room, correct?

18 A Correct.

19 Q Now, when we looked at the photographs
20 of the living room and we looked at the description
21 that was provided, the damage in the living room was
22 significantly greater on one side of the living room
23 than the other beside the couch, correct?

24 A Correct.

25 Q And what was that damage caused by, in

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1 your view?

2 Was it the thermal layer or was it
3 flames from the couch?

4 A I am trying to look for a picture of
5 that.

6 Q I think it's Figure 11 in your report.

7 A So, I think it's really a combination
8 of two things that are happening there. You do have
9 a thermal layer throughout the room. But clearly,
10 you know, the couch has the most consumption of mass,
11 the most thermal damage and there is localized fire
12 damage caused from the couch. The burning above the
13 ceiling directly above the couch. Some of the worst
14 burning on the wall is near the couch.

15 Q So, if the fire started in the couch,
16 then all of that would have to occur and the thermal
17 layer would have to then spread to the office down
18 the hall and around the corner before enough heat was
19 generated in the office to put the laptop into
20 thermal runaway, correct?

21 A Correct.

22 Q So, under that theoretical scenario
23 that you came up with, Ms. Marcellin would have had
24 to walk through all of that to get to the office,
25 right?

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1 A Correct.

2 If you accept her testimony in the
3 sequence of events in her testimony by the time --

4 Q Well, are you saying --

5 A By the time there was significant fire
6 in the office, there would have been significant fire
7 in the -- you know, in the family room. She should
8 have seen the fire of the couch. There would have
9 been a significant hot layer in the couch. So, that
10 was something I discussed in my report that, you
11 know, her testimony is inconsistent with that
12 sequence of events.

13 Q Right.

14 And she would not only have to have not
15 seen it, but she also would have not felt it because
16 she would have had to walk through all that, right?

17 She would have to walk through that
18 thermal layer in order to get to that office?

19 A Correct. If that sequence of events
20 was correct.

21 Q All right.

22 So, do you put a high likelihood that
23 she walked through a thermal layer and didn't mention
24 it, didn't notice a fire raging on the couch and
25 instead focused her attention on the office?

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1 Is that what you conclude is the most
2 likely scenario?

3 A No. I think I describe in my report
4 that that's not consistent with her testimony. So,
5 if you accept her testimony, that's not likely to
6 happen. If her testimony is incorrect and that
7 wasn't really what she did, then that is a scenario
8 that could have occurred.

9 Q Okay.

10 And then, the other scenario that you
11 came up with is that the furnace caused the fire but
12 your assumption there is the furnace caused the fire
13 through the wall into the closet?

14 So, the first fuel was in the closet?

15 A It could have either been in the closet
16 or more likely you would have burned material in the
17 wall. That would have been the first fuel. And then
18 the closet quickly after that. Unless what was in
19 the closet was much more susceptible to ignition than
20 the wall.

21 Q And so, is there a scenario that you
22 are saying that the wall could have heated up from
23 the furnace but not burned and that heat from the
24 wall could have started the first fuel?

25 A I think that's unlikely. But if there

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1 was material on the other side of the wall that was
2 much more susceptible to ignition, then that's a
3 scenario that could have occurred.

4 Q So, the wall --

5 There is a studded wall that has
6 paneling, then airspace, then paneling, right?

7 A That is my understanding.

8 Q So, your theory, then, would be that
9 the heat from the furnace, would that be fire heat or
10 just the heat created by the furnace in the furnace
11 itself?

12 A It could be either.

13 Q Is there any evidence of direct fire
14 damage in the room where the furnace was that you
15 observed in any of the photographs you looked at?

16 A There is fire damage near that area
17 and, you know, we talked about there is not really a
18 photograph showing the back of the furnace.

19 Q Right.

20 But you were going to look on the
21 break. I know you probably had to eat.

22 But had you looked for any pictures by
23 Mr. Gorbett that would have shown the area that you
24 are theorizing could have been on fire in the furnace
25 compartment that then spread to the closet?

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1 Did you find any?

2 A I didn't have time to look for that. I
3 don't know if he has that or not.

4 I think we discussed Figure 22 in my
5 report that shows the wall burned through at least on
6 one side.

7 Q On the closet side, but not on the
8 furnace side?

9 A It's clearly burned through on the
10 closet side.

11 Q Right.

12 A You can't tell what the other side is.

13 Q Well, let me put it a different way.

14 There is no evidence in that photograph
15 that the furnace side of the wall is burned at all?

16 A You can't see the full side of the wall
17 there.

18 Q Which would mean there's no evidence
19 there is any burning on the furnace side of the wall,
20 correct?

21 A Other than the fact that the closet
22 side is completely burned through.

23 Q The closet side and the furnace side
24 are two different sides.

25 Do you agree with me there?

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1 A Correct.

2 Q The closet side shows significant
3 burning, correct?

4 A Correct. It's burned through.

5 Q There is nothing in the photograph that
6 shows the furnace side of the wall burned at all?

7 A Correct.

8 Q There is no other evidence that you
9 have that the furnace side of the wall burned at all?

10 A It wasn't examined.

11 Q Right.

12 So, there is no evidence to support
13 that?

14 A Well, the fact that you have a wall
15 right next to it that has significant burn damage
16 suggests that there would be heating of that wall.
17 But we can't examine that. We don't have that.

18 Q And HP's fire investigator, you don't
19 believe took any pictures that depicted any burns on
20 the furnace side of that wall?

21 A I haven't looked back to that. I don't
22 recall seeing that. But my understanding is that the
23 furnace was never removed to examine that.

24 Q But you could have gone into the closet
25 and taken a picture through that opening of the

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1 burned out closet side of the wall to see what the
2 furnace side of the wall looked like?

3 That's possible?

4 A Potentially if you could fit a camera
5 through that opening.

6 Q Well, you don't think you could do that
7 with a camera and a lens to get a picture inside the
8 closet looking through that burned out wall at the
9 wall behind it in the furnace room?

10 A You may be able to. I am saying if you
11 could.

12 Q And if Mr. Gorbett suspected that the
13 furnace caused the fire, don't you think he would
14 have taken a photograph of that?

15 MS. WANEMAKER: Objection to form.

16 You can answer.

17 A I don't know whether he would or
18 wouldn't. I can't speculate about his mind.

19 Q Would a reasonable fire investigator
20 who -- a reasonably trained fire investigator who
21 believed that the furnace was a potential source of
22 the fire, would they have taken a picture of that
23 wall?

24 A I think it depends on what they -- what
25 their role was in the investigation.

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1 Q So, what did you believe Mr. Gorbett's
2 role was in the investigation?

3 A To document the fire scene and
4 determine whether or not the HP laptop started the
5 fire. I think at the time HP was put on notice.
6 There was an allegation that the laptop may have
7 started the fire. He may not have been concerned
8 about whether the furnace started the fire.

9 Q Well, in order for anything other than
10 the laptop to start the fire, something else would
11 have to start the fire under your theory, correct?

12 A Correct.

13 Q So, you don't think it would have been
14 within Mr. Gorbett's purview to try to figure out the
15 other source of the fire that would have taken the
16 laptop out of the picture with regard to ignition
17 source?

18 A I can't speculate on what he thought he
19 should or shouldn't do.

20 Q Well, if you were there, would you have
21 done that?

22 A Most likely.

23 Q Could you turn to page 20 of your
24 report?

25 Now, in the second --

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1 In the first full paragraph on page 20
2 you say:

3 "There are several areas of interest in
4 the office that warrant further inspection.
5 The closet, a high-burn area; the armoire,
6 where the incident notebook was located;
7 and the desk, where a second notebook (2019
8 HP) was located."

9 Are you with me?

10 A Yes.

11 Q All right.

12 Then you say:

13 "Figure 18 provides photographs of the
14 desk in the office space, which can be seen
15 from the office doorway; this is where the
16 second notebook was located."

17 And there is a picture showing the top
18 of the desk on the right and a picture sort of
19 diagonal from looking down on it on the left, right?

20 A Correct.

21 Q So, Ms. Marcellin had purchased a newer
22 HP laptop and that was sitting on that desktop
23 theoretically closed up at the time of the fire,
24 correct?

25 A Correct.

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1 Q And what was the height of that desktop
2 compared to the height of the pull-out drawer in the
3 armoire?

4 A I don't have the exact dimensions.
5 They appear similar.

6 Q So, what is your opinion as to the
7 radiant heat level at the surface where the 2019
8 laptop was on that desk compared to the radiant heat
9 level from the thermal heat layer of the subject HP
10 laptop?

11 A Sure. So, you know, radiant heat you
12 will be getting from the ceiling would be similar.
13 With the scenario of a fire starting in the closet
14 and exhausting from the closet, you would have more
15 of a hot layer near the closet. You know, exiting
16 the closet and going up towards the ceiling.

17 So, the armoire and things in the
18 armoire would be getting more radiant energy from the
19 smoke exiting the closet and then eventually exiting
20 through the hallway door. But you know, to some
21 extent it would be similar.

22 Q So, let's go back to your candle
23 theory.

24 If the office was set on fire by the
25 candle on the couch, would you expect that there

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1 would be different levels of radiant heat in
2 different parts of the office?

3 A Not initially, but, you know,
4 eventually we do see more significant fire damage in
5 the closet. So, at some point, you know, the closet
6 would have contributed more locally to the armoire
7 than to other parts of the office.

8 Q But not initially?

9 A Not initially.

10 Q And how far into the fire is
11 eventually?

12 A Well, in that scenario, the closet
13 would have been ignited later in the fire. I can't
14 give you an exact timeframe.

15 Q So, the difference in heat then if the
16 couch was the source --

17 The difference in heat in parts of the
18 room would in the office --

19 Withdraw that question.

20 Let me phrase it a different way.

21 If the fire started in the couch and
22 spread by thermal layer into the office, initially
23 then the radiant energy in different parts of the
24 office would be similar. But once the combustibles
25 in the closet were set on fire, then the heat would

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1 be more concentrated in that side of the office.

2 Is that what you are saying?

3 A Correct.

4 Q And that would be sequentially after
5 the living room was on fire and the thermal layer
6 started to move down the hallway into the office, it
7 would also move the other way, too, right?

8 Toward the -- it would move in all
9 directions, right?

10 Into the kitchen. Into the -- down the
11 hallway towards the master bedroom, but also into the
12 office.

13 A Correct.

14 Q And then, once it got into the office,
15 then there would be uniform thermal heat throughout
16 the office until the heat caused the combustibles in
17 the closet to catch on fire and then at that point
18 there would be an uneven distribution of heat in the
19 office?

20 A Correct.

21 Q And is that what you believe happened?

22 A So, as I said, the cause of the fire in
23 my opinion is undetermined. I don't have an opinion
24 where the fire started one way or the other.

25 Q Is that theory that we just discussed

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1 something that's consistent with the evidence that
2 you found in the photographs and the testimony of
3 Ms. Marcellin?

4 A As we discussed earlier, it's not
5 consistent with the testimony of Ms. Marcellin.

6 Q And is it consistent with the physical
7 evidence in your view?

8 A It is.

9 Q So, in the closet, then, is it your
10 belief that the physical evidence in the closet
11 demonstrates that the fire started at a higher level
12 and spread to the lower level?

13 A No. I think it's more likely that the
14 fire started in the closet.

15 Q Okay.

16 Well, if it started in the closet, did
17 it start at the lower level of the closet or the
18 higher level of the closet?

19 A In the lower level of the closet.

20 Q All right.

21 So, if a thermal layer set the
22 combustibles in the closet on fire and it came from
23 the couch in the living room, how is it that the
24 lowest level combustibles set on fire first?

25 A You would have to look at the various

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1 fuels and what was more susceptible to ignition.

2 Q Well, did you do that?

3 A No. The materials had been removed
4 from the closet prior to the inspection.

5 Q Well, there are plenty of pictures of
6 the materials that were on fire in the closet.

7 A There are.

8 Q Right.

9 Did you determine that there was
10 something combustible in the lower part of the closet
11 to the extent that it would be set on fire before the
12 items on the higher end of the closet?

13 A I didn't analyze that.

14 Q Well, wouldn't that be necessary for
15 your candle couch theory to be liable?

16 A As I said, my opinion is that the cause
17 of the fire is undetermined. I can't say that the
18 fire was started by the candle and the couch.

19 Q Well, you can't say the candle was on
20 fire in the first place, right?

21 It never was lit on that night. You
22 can't say that. There is no evidence of that.

23 A I mean, the candle wick had been
24 burned. It was burned at some point.

25 Q Right.

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1 But there is no evidence that it
2 happened the night of the fire?

3 A Correct.

4 Q And there is no evidence that the
5 candle tipped over or was knocked over by anyone
6 else?

7 A I think --

8 Q Or anything else?

9 A There is that wax on the one side of
10 the opening; but, like I said, I can't reach an
11 opinion that that was a cause of the fire.

12 Q We are still on page 20 of your report.
13 You say that it is unlikely that the
14 fire started on that sewing desk that was across the
15 room in the office where the 2019 HP laptop was
16 located, right?

17 A Correct.

18 Q And you base that conclusion on the
19 fact that there is less damage on that side of the
20 room than there is on the other side of the room?

21 A Correct.

22 And, you know, there is less damage to
23 objects on there. There is no evidence that the fire
24 started there.

25 Q Then you say Figures 19 and 20 display

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1 photographs of the armoire in the office.

2 And those are on the next page, right?

3 A Correct.

4 Q And you say:

5 "The armoire doors have smoke and soot
6 deposition extending almost halfway through
7 its height, consistent with the smoke and
8 soot damage on the walls in the office."

9 A Correct.

10 Q So, the armoire has a similar line of
11 demarcation to the walls in the office?

12 A Correct.

13 Q Then you say:

14 "The incident notebook --"

15 Which is the HP Pavilion.

16 "-- on the armoire also shows heat
17 damage to the keyboard and softening and
18 dripping of plastic surrounding the
19 notebook screen."

20 And that's depicted in Exhibits 19 and
21 20.

22 Correct?

23 A Correct.

24 Q And you believe that --

25 Withdraw that question.

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1 Is it your opinion that all the damage
2 to the screen occurred as a result of radiant heat
3 from the thermal heat layer?

4 A Yes.

5 Q And how did you rule out that
6 projectiles coming out of the battery compartment
7 that were at thermal runaway heats impacted the
8 screen in certain areas where you see there is
9 obvious damage to the screen?

10 A You don't see other materials around
11 there burned. It is really consistent with material
12 being heated and dripping down from above.

13 Q So, you are saying that if a projectile
14 that was super heated from thermal runaway hit the
15 screen and then bounced off it, you would expect to
16 see damage to what other than the screen?

17 A Well, I don't expect that that would
18 create damage. But, you know, there is other objects
19 behind there. Paper. That you would have expected
20 some of those projectiles to also hit if that's what
21 was happening and they would ignite the paper. But
22 you don't see you know significant damage to paper or
23 other lightweight objects that would be easy to
24 ignite back there.

25 Q What was the angle of the screen at the

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1 time the laptop went into thermal runaway?

2 What is shown in the photograph or did
3 you assume that it could possibly have been a
4 different angle?

5 A I don't believe it's documented.

6 I think Ms. Marcellin testified she
7 didn't think it was hanging off the desk as much. It
8 seems reasonable that it would have been a bit more
9 upright.

10 Q And if it was a bit more upright,
11 wouldn't the screen, then, have been a barrier to the
12 projectiles going into the armoire?

13 A It depends the direction the objects or
14 the projectiles are going.

15 Q So, there was a hole in the top of the
16 keyboard surface of the laptop that exposed the
17 battery compartment, correct?

18 A Correct.

19 Q And that would be a possible avenue of
20 exit for those projectiles?

21 A Yes.

22 Q And did you assume that that was
23 actually a likely area where the battery contents
24 were ejected from the laptop?

25 A It may have ejected from there or the

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1 bottom of the laptop; but, yeah, that is a possible
2 location.

3 Q If they ejected from the bottom of the
4 laptop, where would they have gotten?

5 A I mean, it depends how far they travel
6 on the desk and then eventually down to the floor.

7 Q Well, was there any --

8 Were there any battery contents found
9 behind the laptop in the armoire?

10 A There were not.

11 Q So, presumably, then, the pathway to
12 where the battery contents were found from the laptop
13 would have to have come from the top of the laptop,
14 right?

15 A That's possible.

16 Q Well, what other possibilities have you
17 considered?

18 A That they also could have come out the
19 bottom.

20 Q And if they came out the bottom of the
21 laptop, how did they get to the place in the office
22 where they were found?

23 That's what I am asking.

24 A They continued and rolled off the front
25 or projected off the front of the shelf.

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1 Q Was there physical evidence of that?

2 A There was some damage to the papers
3 underneath the laptop.

4 Q So, under your --

5 If you look at Exhibits 19 and 20 under
6 your theory, radiant heat from a thermal heat layer
7 was sufficient to raise the temperature of the
8 battery cells to something in the 200 degrees Celsius
9 range but insufficient to set the papers in the
10 armoire on fire or significantly damage the monitor
11 that is shown there, the external monitor, from her
12 prior laptop.

13 Is that your opinion?

14 A No. I mean, there is a few things
15 about what you said that are incorrect.

16 Q Okay.

17 So, tell me, first of all, how did you
18 conclude that the heat from the thermal layer was
19 sufficient to raise the temperature of the battery
20 cells to thermal runaway temperatures without
21 damaging the -- setting the papers on fire or
22 damaging the external monitor?

23 A So, I think when you first asked the
24 question, you said heating them to 200 degrees
25 Celsius. I don't believe the cells need to be heated

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1 to 200 Celsius. But that's an area that Dr. Horn is
2 covering.

3 Q Let me just stop you there.

4 So, you are saying that you came to
5 your opinion without knowing what that temperature
6 would have to be, right?

7 A That's not what I said.

8 I said that Dr. Horn is addressing
9 that. I am saying I don't accept your statement that
10 the batteries would have had to be heated to 200
11 degrees Celsius. That was a statement you made in
12 your earlier question.

13 Q Okay.

14 So, you don't know what temperature
15 that is; you are relying on Dr. Horn?

16 A Correct.

17 Q And you can't even ballpark what that
18 temperature would be?

19 A That's not correct.

20 Q What ballpark are you putting it in
21 then?

22 A I've said that cells can run away
23 anywhere from --

24 It's going to depend on the cell, the
25 condition of the cell, a variety of things. So, sort

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1 of the 90 degrees Celsius to less than 200 degrees
2 Celsius range.

3 Q And in that range of temperatures, they
4 would have to get to --

5 That would be the internal battery
6 temperature, correct?

7 A Correct.

8 Q In other words, the contents of the
9 battery have to get to that temperature?

10 A Portions of the battery, right.

11 Q Right.

12 Well, the inside is the casings?

13 A Correct.

14 The whole battery -- that temperature,
15 but a portion that begins going into thermal runaway
16 and generating heat and continuing that. Or a
17 portion that becomes damaged and the cell separator
18 gets damaged and causes a short.

19 Q Right.

20 And that --

21 You are aware that thermal runaway in a
22 battery pack can occur in one cell and then the heat
23 from that cell can propagate other cells into thermal
24 runaway?

25 A In some scenarios, yes.

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1 Q Well, did you do something to rule that
2 scenario out in this circumstance?

3 A That's something that Dr. Horn is
4 covering.

5 Q I think I have Dr. Horn's --

6 No, I don't have it.

7 Do you believe in Dr. Horn's report he
8 provided an explanation for why that didn't happen
9 here?

10 A I don't recall. I know he discusses
11 which batteries did go into thermal runaway, which
12 batteries didn't go into thermal runaway. I don't
13 recall if he addressed those opinions. I know he's
14 reviewed and considered the report of -- the rebuttal
15 report of Mr. Martin. So, he may have additional
16 opinions about that.

17 Q Well, if the --

18 If thermal runaway occurred in a
19 sequence here with one cell going into thermal
20 runaway and the heat from that cell then heating the
21 next cell in a sequence, do you agree that would be a
22 different scenario than all of them going into
23 thermal runaway at the same time?

24 A Yes. I mean, it's going to be depend
25 on the timing, but those can be different scenarios.

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1 But that's something that Dr. Horn is covering.

2 Q And I believe you did provide an
3 opinion of how long a thermal runaway reaction would
4 be witnessed with ejection -- venting first and then
5 ejection of flames and battery contents.

6 You did provide some opinion on that or
7 are you relying on Dr. Horn for that as well?

8 A I believe I quote Dr. Horn's report or
9 summarize Dr. Horn's report when I discuss that.

10 Q Right.

11 And you said that it's a very short
12 period of time that the battery actually in thermal
13 runaway releases flames and releases battery contents
14 in a matter of a few seconds?

15 A Correct.

16 That's what is in Dr. Horn's report and
17 that's my observation from seeing tests of batteries.

18 Q Again, tell me about that.

19 You are saying that when a thermal
20 runaway reaction occurs in an 18650 cell it typically
21 lasts for how many seconds, in your experience?

22 A It's going to be depend on the
23 specifics, but typically in the order of seconds.
24 Not minutes.

25 Q How many seconds?

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1 A I don't have a specific number.
2 This would be a better question for Dr.
3 Horn.

4 Q So, you don't know the answer to that
5 question?

6 A No.

7 You repeatedly ask questions that I
8 didn't opine upon on my report that I referenced to
9 Dr. Horn. I am telling you my understanding, but I
10 keep on repeatedly telling you this would be a better
11 question for Dr. Horn. I believe he is being deposed
12 tomorrow so you can ask him those questions.

13 Q Well, Thursday.

14 A Thursday.

15 Q I need a break.

16 I am sorry.

17 I thought in your report you provided
18 the opinion that it would be impossible for
19 Ms. Marcellin to witness the ejection of battery
20 materials because thermal runaway only takes a few
21 seconds. I thought that was your opinion.

22 Is that Dr. Horn's opinion that you
23 adopted then when you stated that?

24 A Let me go to that section of the
25 report.

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1 On page 34 of my report, I said:

2 "My report will discuss thermal runaway
3 in the context of it being a potential
4 ignition source, however, Dr. Quinn Horn's
5 expert report discusses, in detail, basic
6 battery overview, battery failure modes,
7 and causes of battery thermal runaway."

8 Q Let's take a look at page 35, and the
9 last paragraph. And the final sentence of that last
10 paragraph after you say that it's your opinion that
11 the thermal layer caused it.

12 You said:

13 "Otherwise, the thermal runaway
14 event would have concluded before Ms.
15 Marcellin arrived at the office."

16 A Correct.

17 Q So, in your opinion, then, the thermal
18 runaway event was a singular event that would last
19 seconds?

20 A I believe I referenced Dr. Horn's
21 report in another area here.

22 Q Okay.

23 Go ahead and look.

24 A So, on page 45.

25 Q A different area then.

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1 A First paragraph I say:

2 "Ms. Marcellin's description is
3 consistent with a thermal runaway event,
4 but these events are short duration and
5 occur on the order of seconds."

6 So, it's referencing Quinn Horn's
7 report. The 116. So, you know, an order of seconds
8 means a few seconds to ten seconds roughly.

9 Q Okay.

10 And you haven't done any independent
11 research on that but are relying on Dr. Horn's
12 opinion that that's how long thermal runaway events
13 last?

14 A That's correct. I mean, it's correct
15 that I am relying on Dr. Horn for that. I haven't
16 done independent analysis for this case, but I've
17 certainly seen batteries go in thermal runaway tests
18 and they go off in the order of seconds as described.

19 Q Okay.

20 And the order of seconds is somewhere
21 less than 30 seconds?

22 A Yes. I mean, it is less than that,
23 yes.

24 Q All right.

25 So, did you assume, then, that all of

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1 the battery cells went into thermal runaway
2 simultaneously to come to that conclusion that you
3 stated in your report?

4 A No. That they may have or they may
5 have gone off at thermal runaway over a relatively
6 short duration.

7 Q So, in other words, what I am asking is
8 how do you rule out the possibility that one cell
9 went into thermal runaway that started a fire and the
10 heat from that cell propagated to the other cells
11 over time and so what Ms. Marcellin witnessed was one
12 of the subsequent cells going into thermal runaway;
13 not the first one?

14 How did you rule that out?

15 A Because that would have taken a much
16 longer timeframe than the timeframe where the fire
17 had started --

18 Had that been the cause of the fire,
19 had the thermal runaway batteries been the cause of
20 the fire, it would have been a much shorter timeframe
21 than the timeframe that it would have taken for smoke
22 to accumulate, for then fire to grow in the room long
23 enough to accumulate enough smoke, then set off smoke
24 detectors, create odors down at the other end of the
25 building, to have smoke in the hallways and the

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1 family room and then to still have batteries going
2 off into the thermal runaway when she got to the
3 office.

4 Q What temperatures would be required to
5 begin to melt plastic and create smoke?

6 A What temperatures to --

7 Dr. Horn discusses this in his report.
8 I want to say somewhere in 130 degrees roughly
9 Celsius for the plastic to first be softening and
10 then it was a couple 100 or 200 or so C range for the
11 plastic to start flowing.

12 Q And does plastic that gets heated to
13 that range release any smoke?

14 A Not initially. It would really just
15 warm up. Melt. I mean, it will give off some
16 minimal amount of smoke, but not as much smoke as if
17 it were burning.

18 Q Ms. Marcellin describes to the
19 investigators the night of the fire that it smelled
20 like an electrical smell in the area. Not
21 necessarily smoke.

22 Do you recall that?

23 A Whether she said that to the Allegany
24 fire investigator?

25 Q I can show you, if you want.

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1 It's Exhibit 4. Tab five.

2 A Yeah, I see that.

3 Q She smelled something electrical
4 burning. So, she smelled an electrical smell.

5 Is that consistent with plastic
6 burning, in your opinion?

7 A I am not exactly sure what she means by
8 electrical smell.

9 Q Okay.

10 A I think it's some other testimony she
11 may have -- or maybe it was in a more recent
12 declaration that she said something smelled like
13 burning plastic.

14 Q Is your opinion also based on your
15 assumption that the smoke detector near her bedroom
16 or near the master bedroom was the one that alerted
17 her to the fire and it was not connected to the one
18 that was closest to the office?

19 A Not necessarily. I mean, it would be a
20 longer duration of time if that was the case.

21 Q Right.

22 But if it was connected to the smoke
23 detector near the office then it would -- both smoke
24 detectors would have gone off closer to the event
25 when the fire started, correct?

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1 A If the two smoke detectors were wired
2 together and both would activate at the same time?

3 Is that what you are asking?

4 Q Yes.

5 A Then she would have heard an alarm
6 activation earlier. She I think testified that she
7 can already smell smoke in the bedroom when the smoke
8 detector went off.

9 Q Let's go back to page 20.

10 A Okay.

11 Q So, I think what we were talking about
12 was Figures 19 and 20.

13 Is it your testimony that the damage to
14 the paper and the other monitor, the other HP monitor
15 that is in the armoire, on the shelf above the
16 subject laptop, that the temperatures that were
17 reached by the thermal layer were sufficient to set
18 the batteries and the laptop into thermal runaway,
19 but insufficient to cause damage, significant damage,
20 to those papers and to that monitor?

21 A There is two factors. There is the
22 temperature of the hot layer, but then also with
23 radiated heat transfer. It's the view factor. And
24 some of those items are protected by the armoire.
25 That's what we described in the report there. The

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1 top of the armoire, the shelves of the armoire
2 protect things that or partially block objects from
3 the radiation from the hot layer whereas the HP
4 laptop was out on that shelf not covered by those
5 shelves, other shelves, in the top of the armoire.

6 Q Now, the other flat surface on the
7 other side of the room would have been also
8 unprotected, correct?

9 A Correct.

10 Q And you didn't find the same level of
11 them as on that side of the room?

12 A So, there was melting of the other HP
13 or softening of the other HP laptop that was on that
14 area.

15 If you look at Figure 29 of my report,
16 you could see the top of the case of the HP laptop is
17 softened similar to how the laptop is on 20. It's
18 just that the screen is down and the screen is
19 closed.

20 Q So, the 2019 HP laptop battery pack
21 didn't go into thermal runaway; correct?

22 A That's correct.

23 Q And it would have experienced
24 temperatures similar to the temperatures experienced
25 by the subject HP laptop based upon its height from

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1 the ceiling?

2 A No.

3 Q Is that because you are saying that the
4 closet was on fire first?

5 A Honestly, at some point the closet
6 became involved in the fire and, you know, so it
7 was --

8 You had hot combustible products and
9 smoke coming from there which are closer to the
10 armoire but then also the --

11 I mean, there is a few other factors.
12 The lid was down on the newer HP laptop, which would
13 have provided further protection of the cells. And
14 then, also, I believe, those were --

15 That was an authentic HP laptop that
16 may have been less susceptible to thermal runaway
17 than the battery pack that was in the older lap --
18 notebook.

19 Q Explain that one.

20 Why did you believe that the 2019
21 laptop battery pack, which was basically not
22 energized at the time, wasn't plugged in, why would
23 the safety features on that have prevented thermal
24 runaway from an external source?

25 A There is a few factors there. It

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1 wasn't plugged in so it wasn't charging so that would
2 make it less susceptible. But we don't know the
3 quality of the cells in the older laptop since it
4 was, you know, not an HP battery pack. It had cells
5 from different manufacturers. We don't know. I
6 think there is at least two manufacturers of the
7 cells in there. We don't know the quality of them.
8 We don't know if they degraded over time because of
9 the lack of some of the protections. We just really
10 don't know what the quality of the cells are. They
11 are lower quality cells. They would typically be
12 more susceptible to thermal runaway.

13 Q Do you have a reference for that?

14 In other words, have you seen any
15 testing done on cells that are cycled multiple times
16 or dead cells compared to highly energized cells as
17 to the temperature and resident time it requires to
18 provoke thermal runaway from an external source?

19 A I believe that's described in NFPA 921,
20 but I also have articles that describe that.

21 Q Do you know --

22 A But again, this is an area that Quinn
23 Horn is covering.

24 Q Okay.

25 Do you know any articles that describe

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1 what you are just -- you said you relied upon?

2 A I --

3 Q Or are you relying on Dr. Horn?

4 A I believe it's in NFPA 921, I believe.
5 I am relying on Dr. Horn. But I've seen previous
6 research projects that show that. I can't recall the
7 specific authors right this moment.

8 MS. WANEMAKER: How do you guys feel
9 about taking a break?

10 MR. SCHWARZ: Now is good.

11 MS. WANEMAKER: Okay.

12 VIDEOGRAPHER: The time is 2:53 p.m.
13 We are going off the record.

14 (Whereupon, a short break was taken)

15 VIDEOGRAPHER: The time is 3:06 p.m.
16 We are back on the record.

17 Q We were talking about the information
18 concerning the susceptibility of different cells to
19 go into thermal runaway and you referenced the 921.

20 If you turn to tab 2, and specifically
21 the section beginning on Section 9.15, which was
22 Exhibit 2 as well. And that's 921.

23 I just want to ask you some questions
24 about this section.

25 A What did you say the number was?

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1 Q 9.15. It's at the very end of chapter
2 9.

3 A Yeah.

4 Q Is this the section that you were
5 referring to?

6 A Yes.

7 Q And section 9.15.1 is entitled,
8 "Lithium-Ion Batteries," right?

9 A Correct.

10 Q And it says:

11 "Similar to other high-energy density
12 fuel packages, when charged lithium-ion
13 batteries are present during a fire they
14 can serve as a fuel load whether they were
15 involved in the cause of the fire or if
16 they were attacked by a fire external to
17 the battery."

18 Correct?

19 A Correct.

20 Q So, then, it says:

21 "Investigators may need to seek
22 assistance of subject matter experts to
23 perform further analysis to determine if a
24 fire damaged battery was the cause of a
25 fire."

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1 And that's what you've done here; you
2 are relying on Dr. Horn, correct?

3 A Correct.

4 Q And 9.15.1.1, it says that batteries at
5 a higher state of charge that ignite have a higher
6 heat release rate compared to batteries at a lower
7 state of charge.

8 A Correct.

9 Q Now, did you make some determination
10 that the batteries in the 2019 HP laptop were at a
11 different state of charge than the batteries in the
12 subject laptop?

13 A So, you would expect that the, you
14 know, the batteries that were being charged overnight
15 would be at 100 percent state of charge whereas the
16 batteries in the 2018, you know, would be potentially
17 at a lower state of charge.

18 Q Potentially, but you don't know when
19 they were last charged, right?

20 A Correct.

21 I mean, they are also different
22 batteries. So, you are comparing, you know, two
23 different batteries.

24 I think the statement in 9.15.1.1 was
25 more generally referring to just apples -- all being

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1 the same if the state of charge is higher. They are
2 going to have a higher heat release rate. And that
3 study that --

4 If you go to the annex material, it
5 references a study that was a study looking at the
6 heat release rate of specific cells that were charged
7 at different states of charge.

8 Q 9.15.1.3 discusses impact or abuse of
9 lithium-ion batteries, right?

10 A Correct.

11 Q And it says that:

12 "Batteries can overheat and ignite if
13 overcharged, undercharged, exposed to
14 excessive heat or cold, flooded, short
15 circuited, or physically damaged."

16 Did I read that correctly?

17 A Yes.

18 Q So, and that's the reason why HP, in
19 its specification, required those protections against
20 overcharge and overvoltage and over temperature,
21 correct?

22 A Yes. I mean, that's part of the
23 reason.

24 Q And without those safety devices, the
25 risk of those conditions occurring and overheating

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1 lithium-ion batteries would increase?

2 A They can, yes.

3 Q So, there we can go back to your
4 report. And I believe we are on page 23 of your
5 report. Figure 22. And that's tab 17 and Exhibit 4.

6 On page 23, you come to the conclusion
7 that:

8 "It is probable that the fire started
9 in or near the closet, as this area of the
10 office experienced the most significant
11 thermal damage and loss."

12 Correct?

13 A Correct.

14 Q So, you agree with Mr. Karasinski that
15 the area of origin was likely the closet?

16 A Correct.

17 If the fire began in the office, that's
18 likely where it started.

19 Q Well --

20 I am sorry.

21 Did you start your sentence by saying
22 if the fire began in the office or did you say it is
23 probable the fire started in or near the closet?

24 A So, that sentence says:

25 "It is probable that the fire started

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1 in or near the closet, as this area of the
2 office experienced the most significant
3 thermal damage and loss."

4 Q That's what your report said.

5 What you just said before you read that
6 sentence, you said -- you seem to be limiting that
7 opinion to only if the fire started in the office.
8 And I am just trying to clarify that.

9 Are you saying that this is conditional
10 on some other conclusion that you say someplace else?

11 A I mean, I do agree that's the most
12 likely place that it started.

13 Q Okay.

14 So, that means it's not probable that
15 it started on the couch or any of the other places
16 you mentioned were possible?

17 A Unless the testimony of Ms. Marcellin
18 is incorrect.

19 As I described earlier, a big part of
20 what rules out the couch is what I mentioned earlier
21 in my report or maybe it's later in my report and I
22 think your experts describe it in the rebuttal report
23 was that the fire starting in the couch is not
24 consistent with her testimony and her walking by the
25 couch multiple times.

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1 Q Okay.

2 In your report, though, you don't say
3 that is based on Ms. Marcellin's testimony. You say
4 that your conclusion that it's probable it started in
5 or near the closet is based upon the -- that it was
6 the area that had the most significant thermal damage
7 and loss, correct?

8 A Correct.

9 But if you look back at the beginning
10 of this Section 3.2 on page 19, it talks about where
11 the -- you know, where the areas of the most burned
12 damage are. It says near the couch and the living
13 room and then around the office closet.

14 But then, I say I think the third
15 sentence there:

16 "Ms. Marcellin's testimony describes a
17 fire in the office and does not note a fire
18 in the living room, where the couch is
19 located. Her testimony is more consistent
20 with the fire starting in or near the
21 office. It is worth noting, that some
22 portions of Ms. Marcellin's testimony about
23 the incident are not consistent."

24 Q But the physical evidence that you
25 determined based upon the amount of thermal damage

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1 and loss makes the closet the most likely scenario
2 for the start of the origin of fire?

3 A If it started in that room. Really
4 what I was doing in this section is comparing
5 different areas of that room. I think before the
6 break you had discussed that, say, there is several
7 areas of interest that warrant further inspection.

8 VIDEOGRAPHER: Dr. Myers, is there any
9 way you can fix the camera? I can't see
10 when you are talking. Thank you.

11 THE WITNESS: Sorry. I am trying to
12 look down at something.

13 Q So, are you saying that the physical
14 evidence that you witnessed from the photographs was
15 not the basis of your conclusion that the fire
16 started in the closet?

17 It was Ms. Marcellin's testimony?

18 A It's both.

19 Q Okay.

20 And the only one you mentioned was the
21 physical evidence in this particular sentence?

22 A Correct.

23 But if you go back in the beginning of
24 this discussion how I ruled out the other portions
25 was based on her testimony.

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1 Q If you turn to page 25, and under
2 Figure 24, you also say:

3 "This fire pattern is also consistent
4 with the fire spreading from the closet to
5 the rest of the room, as noted by Mr.
6 Karasinski."

7 A Correct.

8 Q So, the physical evidence of the amount
9 of damage and loss in the closet plus the fire
10 pattern both support the premise that the fire
11 started in the closet?

12 A Correct.

13 Q And that's without even any of
14 Ms. Marcellin's testimony, right?

15 A So, again, this is in a section where
16 we are looking at the office and they talk about the
17 fire spread in the office.

18 Q Right.

19 But the fire pattern is something that
20 is physical evidence that you found from the
21 photographs?

22 A Correct.

23 Q And that fire pattern is consistent
24 with the fire spreading from the office, from the
25 office closet, to the rest of the office as opposed

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1 to starting someplace else in the office and
2 spreading into the closet?

3 A Correct.

4 Q Okay.

5 And that further supports your
6 conclusion that it probably started -- the fire
7 probably started inside the closet?

8 A Correct.

9 Q And on the next page, page 26, you
10 conclude that it's probable the fire started in the
11 closet based upon the physical evidence and the first
12 fuel was likely the items in the closet which were
13 the clothing and the linens and other things that
14 were witnessed to be burned when the fire was
15 extinguished?

16 A Correct.

17 Q So, you come to the conclusion, then,
18 that the fire likely -- more likely than not started
19 in the closet and spread from the closet in the
20 office to the rest of the office and then spread to
21 the rest of the house?

22 A Correct.

23 Based in part on accepting
24 Ms. Marcellin's testimony that rules out the couch.

25 Q And also based upon the physical

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1 evidence that we just talked about?

2 A Correct.

3 Q So, then under sources of ignition, on
4 page 28, you start to talk about different potential
5 sources of ignition as if the fire --

6 You list the first one, you say, is the
7 electric couch, which the fire investigators
8 confirmed was not plugged in, but you are not
9 accepting that, right?

10 A I mean, that may be the case. I just
11 said I had not seen photographic documentation that
12 confirms that.

13 Q Excluding the candle for a moment, if
14 the couch was not energized or plugged in at the time
15 as the investigators documented that it wasn't, is
16 there some other way that the couch could have been
17 the ignition source?

18 Excluding the candle for a minute. We
19 will get to the candle.

20 A You know, there is always things like
21 if someone was smoking and left a cigarette in there,
22 but the testimony was that no one in the house
23 smoked, so.

24 Q Was there any evidence found that
25 anybody in the house smoked after the fire?

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1 A Not that I am aware of.

2 Q Were there ashtrays or cigarette butts
3 found?

4 A I didn't see those, no.

5 Q Okay.

6 Wouldn't that be something that fire
7 investigators would look for when there is a fire of
8 unknown origin?

9 A Typically. But, you know, people don't
10 always see things. I think one of your investigators
11 said there was no candles, but clearly there were
12 candles.

13 Q Now, this table, a candle that is in a
14 jar, I think that's what we are looking at in Figure
15 27?

16 A Correct.

17 Q And your other theory is that the
18 candle could have somehow lit the couch on fire. So,
19 that somehow the candle was lit. Somehow the flame
20 from the candle jumped from the couch. And then, if
21 it got knocked over, somebody straightened it out at
22 some point so that it would be in the position that
23 you saw it in this photograph that was taken on the
24 night of the fire.

25 Is that what you were working on?

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1 Is that your theory?

2 A No.

3 I think my point was just more
4 generally that there was testimony that there were no
5 candles or candles weren't used and clearly that
6 wasn't correct because there is a candle there. So,
7 that means that candles may be used near the couch.

8 Q Right.

9 But, in other words, that would --

10 The fact that the candle in the glass
11 case is there standing upright, it wouldn't be the
12 source of ignition of the couch unless something
13 happened to that candle, right?

14 Is there some scenario that you are
15 thinking that the flame of the candle while the
16 candle sat in the position that it is in on the table
17 somehow could have lit the couch on fire?

18 A It could have been another object above
19 the candle that ignited it and dropped down onto the
20 couch. But the main point is just that, you know,
21 there was testimony that candles weren't used, but
22 there are clearly candles that are used there. So,
23 then, that makes you wonder why someone testified
24 that there aren't candles if there were.

25 Q You can wonder all you want, but I am

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1 asking you for evidence.

2 What evidence is there to support that
3 the candle started the couch on fire?

4 A That candles were used near the couch.

5 But as I said several times, at the end
6 of the day my opinion is that the fire is
7 undetermined because we don't have enough information
8 to determine the cause.

9 Q If the candle started the fire under
10 this theory and the couch was the first item -- and
11 just excluding Ms. Marcellin's testimony, that makes
12 that improbable.

13 But if the fire started in the couch
14 and then spread through a thermal layer throughout
15 the rest of the house into the office, then what is
16 your explanation for the fire pattern that we just
17 talked about that shows that the fire spread from the
18 closet into the rest of the office?

19 A As I described. That a hot layer
20 ultimately ignited material in the closet and that
21 burned and created those fire patterns.

22 Q And the fire patterns, though, indicate
23 that the origin of the fire in the closet was low in
24 the closet, right?

25 That's what the fire pattern shows?

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1 A That's what it appears, correct.

2 Q So, you are saying that the candle
3 somehow lit the couch on fire and then somehow
4 created a thermal layer that spread throughout the
5 house and went into the office.

6 But the thing that was the first fuel
7 to ignite from that thermal layer was the fuel on the
8 floor of the closet?

9 A Correct. There was something there
10 that was susceptible.

11 The other thing with fire patterns is
12 fire patterns appear. Fire spreads in a certain
13 direction. But really each time a new fuel packet
14 ignites, it's going to make a new pattern. And so,
15 you also have to consider the ease of ignition of
16 different fuel packages, the heat release rate of
17 different packages. We don't have full information
18 about all of that.

19 Q Well, the contents of the closet that
20 went on fire were able to be seen. They were
21 photographed and they were analyzed.

22 And you knew what they were, correct?

23 A We have contradicting information on
24 that. Ms. Marcellin testified there was a compact
25 laptop in there. We haven't seen any signs of the

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1 compact laptop.

2 Q I'm sorry.

3 I am not asking about Ms. Marcellin's
4 testimony right now.

5 I am asking about the contents of the
6 closet that were witnessed by the investigators that
7 you looked at photographs of.

8 You didn't see a photograph of the
9 compact. That wasn't in the closet.

10 What was in the closet was
11 photographed, right?

12 A Well, some of the material was removed
13 from the closet prior to being photographed. So, we
14 don't know exactly where everything was. Some of the
15 materials were moved to the hallway, but things were
16 documented. But you are right, there is no
17 photographs of the compact notebook that was
18 reportedly in the closet.

19 Q Right.

20 I am not asking now about what wasn't
21 in the closet. I am asking you what was found in the
22 closet and what was found in the closet was
23 photographed, both the contents that were remaining
24 in the closet and the contents that were removed from
25 the closet during the firefighting that were put in

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1 the hallway.

2 Do you agree with me?

3 A That's my understanding.

4 Q Okay.

5 Again, you weren't there, but you saw
6 photographs of all of that and also a description of
7 all of that, correct?

8 A Correct.

9 Q And which of the materials that were
10 described in the photographs or in the reports of the
11 other experts would indicate to you that they were
12 particularly susceptible to a thermal layer much more
13 than, for instance, paper that was located in other
14 parts of the room that was at a higher level?

15 Was there gasoline or some petroleum
16 that would be -- you know, that fumes would ignite at
17 a lower temperature than paper would?

18 A I don't think anybody did testing for
19 accelerants. At least I haven't seen any records of
20 anybody doing testing for accelerants.

21 Q So, you think that's possible that an
22 arsonist put an accelerant in the closet and didn't
23 light it but the couch lit it from a thermal layer?

24 A I don't think I said that. You asked
25 me if there was gasoline in there and I said I don't

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1 think anybody tested for accelerants.

2 Q If gasoline was in there, it would have
3 to be in some sort of container, right?

4 A I mean, people pour gasoline on things.
5 It could be --

6 Q Well, if you pour gasoline on
7 something, it evaporates relatively quickly, right?

8 A So, portions of the gasoline --
9 Gasoline is a multicomponent fuel that
10 contains lightweight things, heavier weight
11 components. And so, it doesn't all evaporate.
12 Lightweight materials evaporate off. That's how you
13 can detect ignitable liquids after a fire. Some of
14 the heavier components still remain there even after
15 a fire.

16 Q Did the fire pattern, in your
17 professional view, was it consistent in a closet with
18 an accelerant?

19 A Not specifically, no. I think you do
20 see isolated areas of low burn. You know, what the
21 couch and --

22 Q I --

23 A -- which are two different areas which
24 is something sometimes people point to as a potential
25 cause of arson or evidence of arson.

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1 Q I am sorry.

2 I want to ask you about the closet and
3 the burn pattern in the closet.

4 Is it something about that burn pattern
5 that leads you to the conclusion that some of the
6 items that were in the closet were soaked with an
7 accelerant?

8 A That's not something I considered
9 explicitly until you brought it up earlier. You
10 know, you can't necessarily say fire patterns are
11 caused by gasoline or not caused by gasoline. The
12 way you would test that is to test for accelerants.
13 I don't believe that was done.

14 Q So, you are saying that the fire
15 pattern that you would expect to see if the first
16 fuel was soaked in an accelerant would be the same as
17 a fire pattern you would expect to see if the same
18 materials were not soaked in an accelerant?

19 A So, NFPA 921 describes that some of the
20 types of fire patterns that people historically
21 attributed to evidence of there being gasoline or an
22 accelerant really aren't a sign of that. So, I think
23 the way you would test for an accelerant is by doing
24 testing to determine if there is residues of
25 accelerant. Not by explicitly looking at fire

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1 patterns.

2 Q So, no one did those tests?

3 A Not that I am aware of, no.

4 Q So, the accelerant idea came from you.

5 So, I just want to go back to it.

6 So, the theory that the candle somehow
7 caught the couch on fire and then spread by thermal
8 layer into the office and that the first fuel then
9 was the bottom of the closet you said could have
10 happened if there was an accelerant.

11 A We would have to go back at the record,
12 but I think what you said is completely incorrect. I
13 think you were the one that described was there
14 gasoline poured on the material in the closet. I
15 don't believe I am the one who brought that up.

16 Q So, let's go back to the question.

17 My question was if your theory that a
18 candle could have somehow -- that candle that was
19 upright on the table could have somehow spread its
20 flame to the couch. The couch then went on fire.
21 The heat layer created by the couch spread throughout
22 the house into the office. And the first fuel
23 ignited was the material on the floor of the closet.

24 I asked you why that would occur before
25 other items much closer to the ceiling and, like,

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1 paper. Why would the closet contents on the floor
2 ignite first. Why would that be the first fuel under
3 your candle on the couch thermal layer spread
4 scenario?

5 A I said there may have been materials
6 there that were more susceptible to ignition. I
7 think that's when you brought up the hypothesis of
8 gasoline, which I am not even sure would be more
9 susceptible to ignition by radiant energy.

10 Q What materials that were removed from
11 the closet and photographed would be of the type that
12 would be more susceptible?

13 A I don't have that information. There
14 is different types of fabrics that are easier to
15 ignite than others. Different types of fabrics would
16 burn at higher heat releases than other fabrics.
17 That's not something I examined for this.

18 Q So, the answer, then, is what you
19 postulated as possible but there was no evidence in
20 the photographs that you looked at that would allow
21 you to say that some substance on the floor of the
22 closet was more susceptible to being a first fuel
23 than anything else?

24 A Correct. We don't have enough
25 information to analyze that.

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1 Q Okay.

2 When you talk about the electric
3 fireplace and the television and you were able to,
4 looking at the photographs, decide that that was not
5 the likely ignition source, correct?

6 A Correct.

7 Q And then, you talk about the natural
8 gas furnace and you said you can't rule that out
9 because based on the physical evidence you can't rule
10 that out because nobody removed the furnace from the
11 room?

12 A Correct.

13 Q Okay.

14 And you mention this blowout. Blown
15 out. I think that you described that as some
16 deformity of the metal in the furnace in an outward
17 direction like gas might have exploded.

18 Is that what you described?

19 I didn't really follow it.

20 A So, I guess in the third complete
21 paragraph on page 31, I reference a quote from
22 Anthony Greenwald, a member of the interior
23 firefighting team, that said that:

24 "He moved down the hall to the first
25 room. He discovered the furnace had been

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1 'blown out.'"

2 It's not clear what he meant by that.
3 But the grill on the furnace is -- in photos -- is
4 displaced outwards.

5 Q And my question is what --

6 You don't know what he meant by blown
7 out, but you saw the grill that was displaced
8 outward.

9 What would the mechanism of displacing
10 that grill outward be for causing the fire in the
11 closet?

12 A So, in combustion equipment, if you
13 have a delayed ignition, you can have, you know, the
14 build-up of excess gas and then causes, you know,
15 somewhat of an explosion inside a piece of equipment
16 that would blow something out, blow a connection out.
17 So, that could have allowed combustion products or a
18 flame to exit the furnace.

19 Q Does the side of the furnace that had
20 what you are calling blowing out was the side facing
21 the louvered door, right?

22 A Correct.

23 That's the only side we could see of
24 the furnace. I don't know if there was damage on the
25 other sides of the furnace.

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1 Q If flames shot out of the furnace into
2 the louvered door, then that would have been the
3 first fuel, right?

4 The louvered door would have caught on
5 fire?

6 A Or other materials that were in that
7 direction.

8 Q Well, what other materials were in the
9 direction?

10 The furnace was only a few inches from
11 the louvered door when it was closed, right?

12 A Correct.

13 Q Are you postulating that there was some
14 flammable material in between the louvered door when
15 it was closed and the furnace?

16 A No.

17 Q So, if flames shot out of the furnace
18 and started a fire on the louvered door, there would
19 be evidence of fire damage on the louvered door?

20 A Correct.

21 Q And the investigators determined that
22 there was no fire damage on the louvered door. There
23 was only smoke and soot damage.

24 A I think they said there wasn't charring
25 on the door.

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1 Q Well, charring would be an after effect
2 of a frank fire, correct?

3 A I'm sorry. I --

4 Q The evidence of combustion of the wood
5 in a louvered door.

6 A Correct.

7 Q That would leave char.

8 So, there's no evidence of combustion
9 of the louvered door?

10 A There is no char of the wood. That's
11 correct.

12 Q Okay.

13 So, if fire shot out in the direction
14 of the louvered door and did not set the louvered
15 door on fire, then how did that fire get into the
16 office closet and cause those materials on the floor
17 of the closet to combust?

18 A So, we talked about this earlier. We
19 didn't see the back side of the furnace so we don't
20 know what may have happened on the back side of the
21 furnace or on the sides of the furnace. And there's
22 other mechanisms that a furnace can ignite materials
23 nearby. But that wasn't analyzed in this case.

24 Q But what we are talking about is the
25 term blowout and the deformity you found in the front

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1 of the furnace.

2 Did they find a deformity anywhere else
3 in any other direction in the furnace?

4 A I'm not aware of anybody looking at the
5 other sides of the furnace.

6 Q Well, you looked up the model of the
7 furnace. You have a reference to it in your
8 materials.

9 Was there venting on all sides of the
10 furnace, or just in the front?

11 A This is a direct vent furnace. So, by
12 design it wouldn't be venting into the building.

13 Ms. Marcellin also --

14 Her first suspicion was that this is
15 smoke coming from the furnace, which I am not sure
16 why that was her first suspicion. If there had been
17 previous problems with the furnace where smoke was
18 coming into the house, which isn't something you
19 would expect from a properly operating direct vent
20 furnace.

21 Q How old was this furnace?

22 A About two years old.

23 Q So, it was a relatively new furnace?

24 A Correct.

25 Q Relatively modern by the standards that

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1 we've been talking about, correct?

2 A Correct.

3 Q And there is no evidence that there was
4 that you've seen --

5 You told me what you haven't seen, but
6 there was no evidence that you have seen that
7 suggests the furnace started a fire within the
8 furnace compartment?

9 A I think by design it would be, you
10 know -- - starting a fire inside the furnace --

11 Q I'm sorry.

12 Within the enclosure of the room that
13 included the louvered door.

14 You saw no photographs of evidence of
15 fire within that area that the furnace was located?

16 A The furnace is adjacent to the closet,
17 which is one of the high areas of heavy burn.

18 Q I am sorry.

19 The closet had fire in it.

20 I am talking about the room that the
21 furnace was in.

22 You've seen no photographs that show
23 any evidence of fire within that room, correct?

24 A You know, there is certainly
25 discoloration, heat damage to the PVC, exhaust pipes

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1 coming from the furnace. So, there is certainly
2 smoke and heat damage in there, but the furnace
3 wasn't removed to fully examine that area.

4 Q I didn't ask you about smoke and heat
5 damage. I asked you about fire damage. Direct fire
6 damage.

7 Are there any photographs that show
8 direct fire damage within the room that the furnace
9 was located?

10 Char? Loss of material?

11 A So, if you look at photograph --

12 This is in my tab 5. I don't know what
13 exhibit number that is but --

14 Q That's the Allegany Fire Report.

15 A So, that's HP and I am looking at
16 photograph HP 00436.

17 Q Okay.

18 A You can see the header above that
19 closet is heavily burned. Above that furnace room is
20 heavily burned. You can actually see that in the top
21 it appears that it is drywall on the inside of that
22 closet and that's -- it appears in the top left
23 corner of that image. It's broken through or you can
24 see through to the wood paneling on the other side of
25 the wall. And there is wood paneling falling down on

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1 the top of the furnace. There appears that there is
2 charring of the paper on the drywall in the top right
3 corner of that back wall in that photograph.

4 Q Okay.

5 And that's all up within the top 2 feet
6 of the ceiling and not in the direction of the
7 office, correct?

8 A No. That's in the direction of the
9 closet in the office. You can't see lower because
10 the furnace is in the way.

11 Q Okay.

12 So, is it your opinion, then, that that
13 damage occurred from heat that came from the furnace
14 or damage that occurred from heat that came from the
15 closet towards the furnace through that wall in the
16 area of the closet that was most heavily damaged by
17 fire?

18 A It's my opinion that that's an area
19 that you have to further examine to make that
20 determination.

21 Q So, you don't think it's more probable
22 than not that the damage at the top of the photograph
23 that's close to the ceiling above the furnace came
24 from the heavily damaged closet behind it as opposed
25 to it came from flames that shot out of the furnace

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1 somehow?

2 You can't make that determination?

3 A I would have to look at --

4 You would have to remove the furnace
5 and look at the totality of the closet to fully
6 examine that.

7 Q Well, there is no damage -- no fire
8 damage to anything below that level of a couple of
9 feet below the ceiling, correct?

10 Everything you pointed out is within a
11 couple of feet of the ceiling?

12 A When we looked at that other wall of
13 the closet -- I think it was Figure 22 of my report
14 -- it's burned through lower in the closet, so.

15 Q Right.

16 But the top of the closet was
17 significantly burned. You can take a look at those
18 pictures if you don't remember that.

19 A Yeah, that's correct.

20 Q And that would be the other side of the
21 area of the drywall that you pointed out showed fire
22 damage?

23 A Correct.

24 Q If you look, for instance, in the same
25 exhibit, which is Exhibit 6, HP 463, which shows the

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1 closet and shows the damage near the ceiling of the
2 closet and the closet wall in that area.

3 That is the back of where you were
4 looking at from the furnace, correct?

5 A Correct.

6 Q But you are saying it's equally
7 plausible in your professional opinion that the fire
8 started in the furnace and spread through the top of
9 that room into the closet as the fire started in the
10 closet and spread into the furnace room?

11 Equally plausible?

12 A No. I said to make a determination of
13 that, I would like to pull out the furnace and be
14 able to look at the wall behind the furnace.

15 Q And if you don't do that, then you
16 consider both of those scenarios equally plausible
17 based on the photographs that you looked at?

18 A I don't have an opinion one way or the
19 other.

20 Q So, when you came to your opinion in
21 your report that the fire originated in the closet,
22 are you saying now that you are changing that opinion
23 to say that you can't determine that it originated in
24 the closet? It could have originated with equal
25 plausibility in the furnace room?

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1 A No. I think when we were talking
2 earlier, I described the furnace would have been a
3 possible ignition source that could have ignited
4 material in the closet. We haven't identified any
5 other ignition sources in the closet.

6 Q So, wouldn't the ignition have to
7 happen --

8 In other words, the furnace couldn't
9 shoot an ignition source through the wall into the
10 closet. It would have to start a fire in the
11 closet -- in the furnace room before it could spread
12 to the closet, right?

13 There is no direct conduit of a flame
14 from the furnace into the closet, is there?

15 A I don't know. We haven't been able to
16 examine that whole back wall.

17 Q But you are saying there could have
18 been, like, a hole in the wall that would allow the
19 furnace to shoot flames through in the closet that no
20 one discovered?

21 A I didn't say that, but, I mean, that's
22 a possibility. No one removed the furnace to look at
23 it.

24 Q But if there was a hole in the wall,
25 couldn't you see it in the closet, too?

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1 A You can't see the whole wall between
2 the furnace from the closet.

3 Q Okay.

4 The next section of the report -- if
5 you can go back to tab 17, which is Exhibit 4 --
6 talks about how you ruled out the HP laptop from
7 being the ignition source?

8 And I think that begins on page 32.

9 A Are you referring to the 2019 HP laptop
10 or the 2011?

11 Q No.

12 The 2011 you begin to discuss on page
13 32 of your report.

14 A Okay.

15 Q And you say that on this page 32, you
16 refer to the figure 30 on the next page.

17 And you say:

18 "The yellow box highlights a section of
19 the notebook that is damaged and open
20 around the battery pack area; this could
21 have occurred due to a combination of
22 radiant heat from the hot ceiling layer and
23 thermal runaway of cells. The notebook
24 screen has some resolidified material on
25 it, consistent with softening of plastic

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1 around the notebook screen due to radiant
2 heating."

3 Do you see that?

4 A Yes.

5 Q So, the first sentence --

6 I should have just stopped there.

7 But the first sentence talks about the
8 yellow box.

9 And you say that in Figure 30 the
10 yellow box is damaged to the top of the laptop over
11 the battery compartment that was a combination of
12 radiant heat and the heat from thermal runaway.

13 A Correct.

14 Q And does that fact, the yellow box,
15 somehow prove that the thermal runaway did not occur
16 before the radiant heat occurred?

17 A (No verbal response)

18 Q Let me ask a different question.

19 If one of the shells of the laptop went
20 into thermal runaway and then ejected contents that
21 started a fire in the closet that subsequently
22 created a thermal heat layer, how would, in your
23 opinion, the physical evidence on the top of the
24 laptop look different?

25 A If that plastic wouldn't have been, you

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1 know, pre-softened by the radiant heating, then I
2 think you probably would have had a different
3 appearance on the battery area because the batteries
4 would have been trapped in there for longer because
5 they would have to melt their way out.

6 Q What is the basis of that opinion?

7 In other words, have you had experience
8 seeing what a laptop that goes into thermal runaway
9 would look like prior to radiant heat from a thermal
10 heat layer?

11 Do you have some evidence that supports
12 that opinion you just gave?

13 A I've seen batteries --

14 I mean, I've seen laptops attacked by
15 fire where batteries didn't go into thermal runaway.
16 I've seen cases where batteries did go into thermal
17 runaway but remained in the notebook.

18 But what I am saying is that if the
19 sequence was different you would expect that the
20 plastic wouldn't have been pre-softened. So, the
21 cells would had to -- would have had to completely
22 melt through on their own rather than melting through
23 a pre-softened layer.

24 Q That's what I am trying to get at.

25 In other words, is that based upon your

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1 study of this topic or based upon your own experience
2 looking at these?

3 What leads you to the conclusion that
4 it would look different?

5 A Just what I said. I think the laptop
6 would look different depending on which scenario had
7 occurred.

8 Q Right.

9 What experience do you have?

10 In other words, you are saying that
11 you've compared laptops that went into thermal
12 runaway from an external fire source to laptops that
13 had gone into thermal runaway because of defects of
14 the battery cells.

15 And from this comparison, you are able
16 to definitively say that the pattern that would be
17 developed would be different from one to the other?

18 A No.

19 I am saying that the pattern would look
20 different. I don't know that we could make that
21 determination from this specific photograph.

22 Q Well, you have a lot of photographs of
23 the laptop.

24 Are there other photographs that would
25 allow you to come to the opinion as to what order the

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1 damage was caused in, whether it was thermal runaway
2 that caused it first and then radiant heat or radiant
3 heat and then thermal runaway?

4 A I think the larger piece of evidence is
5 the description of the sequence of events that
6 differentiates between those two.

7 Q And when you say the description of the
8 sequence of events, you are talking about the
9 testimony of Carol Marcellin?

10 A Correct.

11 Q So, in coming to the conclusion as to
12 the sequence of events, you are relying on Carol
13 Marcellin's testimony; not the physical evidence?

14 A I am relying on both.

15 Q Okay.

16 So let's just take her testimony out of
17 it then and explain to me the basis of your opinion,
18 what methodology you utilized, to determine that the
19 way that laptop looks in Figure 30 is different than
20 it would look if the batteries went into thermal
21 runaway first?

22 I want to know your methodology.

23 A In looking at the fire patterns on the
24 laptop.

25 Q I am talking about the yellow box.

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1 That's what you highlighted in your report.

2 A Right.

3 Q The yellow box is what tells you that
4 this went into thermal runaway after a fire attack
5 and not -- and the radiant heat from that fire attack
6 is what caused the thermal runaway, and not the
7 opposite.

8 So, that's what I am asking you.

9 What inside that yellow box, that you
10 have drawn and highlighted, allows to make that
11 determination?

12 Using what methodology?

13 A I don't think in my report I say
14 explicitly that that yellow box is what makes that
15 designation.

16 Q Okay.

17 Now, if you turn --

18 If you look at Figure 31, that's the
19 bottom of the laptop, right?

20 A Correct.

21 Q And the plastic on the bottom of the
22 battery compartment is severely deformed.

23 Would you agree with that damage?

24 A Correct.

25 Q And that was a protected surface that

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1 was not subject to direct radiant heat, correct?

2 A Correct.

3 Q So, the damage to the bottom of the
4 laptop below the battery compartment is fairly
5 similar to the damage to the top of the laptop above
6 the battery compartment?

7 The plastic is mutilated.

8 A I don't agree with that
9 characterization that it is mutilated. It is
10 different. The top of the laptop you have uniform
11 melting of a lot of material, of the keyboard, of the
12 touch pad, of the --

13 Q I'm sorry.

14 Let me interrupt you for a second. I
15 apologize for interrupting.

16 I am asking you about the yellow box.
17 Okay? The area of the yellow box. The damage to the
18 plastic in the area of the yellow box in Figure 30
19 compared to the damage to the bottom of the battery
20 compartment in Figure 31.

21 Are you saying that there is much more
22 damage or some level of different damage to the top
23 than there is to the bottom and that the top is more
24 severe?

25 A I am differentiating that the bottom is

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1 very localized. There is no surrounding damage from
2 radiant heat transfer. All of the heat damage there
3 would be from the thermal runaway of the cells
4 whereas at the top you have --

5 Q Let me stop you there.

6 A -- you have both portions.

7 Q So, you are agreeing that the damage to
8 the bottom of the laptop shown in Figure 31 would
9 have entirely been from the battery cells going into
10 thermal runaway because radiant heat didn't get there
11 because it is a protected area?

12 A Correct.

13 Q Okay.

14 And now we are saying that the damage
15 in the yellow box, not to the keyboard, but to the
16 area above the battery compartment in Figure 30 is a
17 different kind of damage that shows that the plastic
18 was softened first before by radiant heat?

19 Is that what you are saying?

20 A Right. You can see evidence of both.
21 If you look at --

22 I don't know if it's the same image or
23 not. But I think what is labeled HP 0471.

24 Q That's in the Allegany Fire Department
25 Report?

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1 A Right. Right.

2 Q So, let's look at that.

3 A You can see that it's less localized
4 and a more gradual melting through the -- to the top
5 of the laptop. You see both. You see melting all
6 around that and it becomes more intense or more
7 severe as you get closer to the area that's the
8 yellow box.

9 Q Okay.

10 So, I am just trying to follow you.

11 So, you are saying that the damage to
12 the top of the laptop above the battery compartment
13 is of a different nature than the damage below the
14 battery compartment on the other side of the
15 computer?

16 That's what you are saying?

17 A Correct.

18 Q And the different nature is that you
19 feel that the damage to the top surface of the
20 battery compartment is more significant than to the
21 lower surface?

22 A No. I am saying it's more uniform.
23 You have, you know, melting all over the top. And
24 then it becomes more severe just in that localized
25 region where the battery comes through. But if you

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1 look at the bottom, it's really entirely localized on
2 that, I guess, what is the bottom right side of the
3 laptop. In the picture it is on the left, but if the
4 laptop was on its base, that would be the right side.

5 The back side where it looks like the
6 back of the laptop has melted and flipped over, you
7 know, lines up with the area where the batteries come
8 through the top and are in yellow and in the other
9 image.

10 Q So, the battery compartment extends for
11 a --

12 Past the middle of the keyboard, right?

13 A Correct.

14 Q And if you look from the top, you are
15 not saying that the entire top surface above the
16 battery compartment is uniformly damaged; it's more
17 on the right side?

18 A Correct.

19 That even outside of the battery
20 compartment in the front near where the touch pad is,
21 around that. That same plastic is melted.

22 Q Okay.

23 But again, we are talking about the
24 area above the battery compartment because --

25 Withdraw that question.

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1 In the area above the battery
2 compartment, the right side of the battery
3 compartment, above that compartment there is more
4 damage than the left?

5 A Correct.

6 Q And you can actually see that some of
7 the cells protruding out of the top or portions of
8 the cells protruding out of the top of the surface of
9 the laptop, right?

10 A Correct.

11 Q And you are saying that, that wouldn't
12 happen if this was a thermal runaway reaction without
13 the plastic being softened first by radiant heat?

14 A I am saying that makes it easier for it
15 to happen.

16 Q Okay.

17 And so, the temperature of thermal
18 runaway, then, when a cell goes into thermal runaway
19 and explodes, that's not sufficient to get through
20 the plastic that covers the battery pack?

21 It would need to be softened first by
22 radiant heat?

23 A No. It can be enough.

24 Q Okay.

25 So, how do you use, then, that evidence

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1 to discern whether the thermal runaway happened
2 before or after the radiant heat?

3 What methodology did you use to
4 conclude that it was radiant heat that applied first
5 before the thermal runaway caused the damage that we
6 see in this picture?

7 A As I said earlier, a large part of the
8 evidence I am relying upon is the testimony of Ms.
9 Marcellin and the sequence of events. The timing of
10 the fire versus the timing that she went into the
11 room and observed the -- or went to the room and
12 observed the laptop going into thermal runaway.

13 Q Okay.

14 So, that's a large part, and we will
15 put that aside. But that means there is other parts
16 of what supports your opinion and that's the physical
17 evidence. And that's what I am trying to get you to
18 give me an answer to.

19 Is what methodology did you determine
20 the physical evidence supports your theory of radiant
21 heat applied first before the thermal runaway
22 occurred?

23 A It's really looking at the fire pattern
24 or looking at the melting patterns and seeing the
25 relatively localized, you know, more localized damage

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1 more widespread on the laptop as well as then the
2 damage from the battery. If you look at the left
3 side of the laptop, you know, you are getting bulging
4 on the top whereas you don't on the bottom.

5 Q So, I guess that's my question.

6 I'm sorry if I am being obtuse.

7 But clearly there was radiant heat
8 damage to the top surface of the laptop and keyboard,
9 right?

10 A Correct.

11 Q And clearly, there was thermal runaway
12 heat related damage to the area above the battery
13 compartment?

14 A Correct.

15 Q So, my question is how did you make a
16 determination of which happened first?

17 Your belief is that the radiant heat
18 damage to the entire top of the laptop happened first
19 in order to heat the battery cells to thermal runaway
20 and I want to know how you look at that picture and
21 can determine the order in which those two heat
22 sources occurred?

23 A So, as I said, it's two things. I know
24 you like to keep on disconnecting them, but part of
25 it is the witness testimony from Ms. Marcellin, but

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1 then the fire damage or the melting damage to that is
2 also consistent with that scenario.

3 Q So, again, without Ms. Marcellin's
4 testimony, tell me what is your explanation of how
5 you can time the radiant heat thermal damage
6 occurring before the heat damage caused by the
7 thermal runaway?

8 What about either this photograph or
9 any other photographs of the laptop can you point to
10 and say, "I can definitively say that it had to be
11 radiant heat first before the heat generated by the
12 thermal runaway that caused this picture to look like
13 it does." Or any picture that you have from Mr.
14 Gorbett or anybody else.

15 A I am not doing it based on a single
16 picture. I am doing it on the totality of the
17 evidence, which also includes Ms. Marcellin's
18 testimony. You can't separate that.

19 Q Well, we can separate it from a
20 standpoint that there are two different items of
21 evidence, right?

22 Ms. Marcellin's testimony is what it
23 is. You testified just a little while ago that, in
24 your opinion, the physical evidence shows that the
25 thermal damage from the heat layer had to occur

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1 before thermal runaway.

2 And I just keep asking you what is it
3 about the appearance of this laptop in this
4 photograph that you are relying upon to come to that
5 conclusion?

6 And if you say that you can't come to
7 that conclusion based upon looking at the picture,
8 that's fine. And that you are relying entirely on
9 Ms. Marcellin's testimony to time which heat source
10 happened first, that's fine.

11 But I would ask you to answer the
12 question.

13 Is there something about the photograph
14 that allows you to time which happened first?

15 A I tried to explain this several times,
16 and can do this again.

17 The differences I see are in Figure 31.
18 You see localized melting just to the right region of
19 the -- you know, what is in the picture is on the
20 left region, but it would be on the right of the
21 laptop if you set it down -- where you have
22 significant melting and consumption of material where
23 on the top you have less localized damage and more
24 uniform melting over the top of the laptop, which
25 means the combination of the radiant heat transfer

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1 and of the additional damage caused by the thermal
2 runaway of the battery. That damage to me is
3 consistent with the testimony of Ms. Marcellin.

4 And if that's not an open question, I
5 would like to take a break.

6 MS. WANEMAKER: And I believe the court
7 reporter needed to at 4:25?

8 (Whereupon, a discussion was held off
9 the record)

10 VIDEOGRAPHER: The time is 4:11 p.m.

11 And we are going off the record.

12 (Whereupon, a short break was taken)

13 VIDEOGRAPHER: The time is 4:13 p.m.

14 We are back on the record.

15 Q So, to see if I can summarize where I
16 think we just went through.

17 With regard to the physical evidence,
18 you believe the damage to the bottom of the laptop
19 compared to the damage to the top of the laptop
20 indicates to you that the top of the laptop above the
21 battery compartment experienced radiant heat damage
22 before thermal runaway and, therefore, the top of the
23 laptop has more damage than -- and more uniform
24 damage than the bottom of the laptop?

25 Is that really what you are saying?

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1 A So, as I said a few times, I think the
2 primary determination or a large factor of the
3 determination of the order is really Ms. Marcellin's
4 testimony. But this burn damage, you know, does seem
5 consistent with that. This melting damage seems
6 consistent with that.

7 Q The reason it is consistent with that
8 is you believe the damage to the top of the battery
9 compartment visible on the keyboard side of the
10 computer is different than the damage that's shown on
11 the bottom of the laptop which clearly experienced no
12 radiant heat damage, correct?

13 A Correct.

14 Q Okay.

15 I will leave that alone.

16 And Ms. Marcellin's testimony that you
17 are relying upon, you are saying that that's based on
18 your assumption that thermal runaway reactions only
19 occur for a few seconds, right?

20 A On the order of seconds. That's based
21 on the report of Dr. Horn; his analysis.

22 Q And it is also based on the assumption
23 that the four cells that went into thermal runaway,
24 went into thermal runaway simultaneously?

25 A At a similar time.

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1 Q So, within seconds of each other?

2 A Within seconds. Tens of seconds.

3 Q And again, just so that I know, what is
4 the basis of your opinion that all four cells went
5 into thermal runaway within seconds of each other or
6 tens of seconds of each other?

7 A It is really the testimony of --
8 I mean, it's the report of Dr. Horn.

9 Q So, you are relying on Dr. Horn's
10 opinion that all of the cells went into thermal
11 runaway within seconds or tens of seconds of each
12 other?

13 A Correct.

14 Q And if that were true, if that --
15 If you didn't have that testimony, what
16 else about Ms. Marcellin's testimony would allow you
17 to determine that the thermal runaway event happened
18 as a result of an external fire source?

19 Anything else about her testimony other
20 than your assumption or Dr. Horn's opinion?

21 A So, the --

22 I mean, it's really her observations
23 and timing of hearing a smoke alarm going off. The
24 time that it would take for a fire to progress and
25 cause smoke to transmit to outside of the office, to

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1 near her, her observations that there was smoke she
2 can smell in the bedroom. She can smell smoke.
3 There was smoke present in the family room, in the
4 hallway. Seeing glowing from a distance from the --
5 from the hallway. And then going in seeing just then
6 the batteries going into thermal runaway.

7 Q Did you assume that the exploding
8 battery cells would not create any light that would
9 give a glowing?

10 A No, I didn't assume that.

11 Q So, the glowing could have been the
12 explosions of the battery cells and the hot
13 projectiles that it was omitting, correct?

14 A I mean, batteries releasing gases that
15 ignite can create light, yes.

16 Q And the other question I had is when a
17 combustible is first introduced to an ignition
18 source, is it possible that smoke will be emitted
19 before a flame actually develops?

20 A So, smoldering combustion can produce
21 smoke prior to the flame.

22 Q Is there anything in the physical
23 evidence that allows you to determine whether the
24 combustibles in the closet emitted smoke before any
25 frank flames were visible?

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1 A I'm sorry.

2 Did you say any frank flames?

3 Q In other words, any obvious flames were
4 visible.

5 A It's going to depend on the ignition,
6 that we don't know, that there can be a generation of
7 smoke before there is physical flame.

8 Q So, if a hot piece of battery component
9 landed in the closet on these combustibles, it's
10 possible that they could have smoldered before a
11 flame actually developed?

12 A A battery going into thermal runaway
13 may create a flame.

14 But you are saying a hot particle
15 coming from a battery that went into thermal runaway,
16 if it ignited material, made it smolder for a while?

17 Q Yes.

18 A That can happen but it's going to
19 generate a smaller amount of smoke than, you know, if
20 you have more involved combustion of the materials.

21 Q Are you aware of the temperature that
22 can be generated inside a battery cell from thermal
23 runaway?

24 A I don't have a specific number in front
25 of me right now, but it could be quite high.

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1 Q So, in other words, we talked about
2 irreversible thermal runaway reactions happening
3 somewhere in the 100 to 200 range of Celsius.

4 Do you agree that once thermal runaway
5 occurs, that the temperature reaches much greater
6 heights as much as 1,000 degrees Celsius?

7 A I don't have a specific number in front
8 of me, but that's a reasonable range.

9 Q So, if a battery component was ejected
10 at 1,000 degrees, depending on its mass, that would
11 have quite a bit of heat potential, correct?

12 A Correct. It's going to be depend on
13 the mass. The components of the cells tend to be
14 thin foils that don't have a thick mass and will cool
15 quickly.

16 Q But to cool quickly from 1,000 degrees
17 Celsius still is quite a heat source even seconds
18 after it is ejected, right?

19 A No, not if it's a thin foil.

20 Q Do you have any data that you looked at
21 on how long the battery components that are ejected
22 from thermal runaway induced cells, how long they
23 stay hot enough to cause a fire?

24 A I mean, we see in this case, in this
25 incident, we see components of the batteries that

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1 were thrown away, thrown around to various areas of
2 the room where materials that were around didn't
3 ignite. I am looking at page --

4 In my report I show where various cells
5 ignited and those are areas that there wasn't
6 significant fire damage. Including back behind the
7 desk or the sewing machine, two cells are found, and
8 there is no burning back there.

9 There is a number of portions on the
10 carpet on page 32 where you have various components
11 of the battery that landed on the carpet and didn't
12 ignite material. So. The evidence in this case is
13 that those materials didn't ignite things.

14 Q The components you are talking about
15 are the casings, right?

16 A It's a combination of both. The cans
17 ended up behind the desk. But then in the --

18 If you look at Figure 33 of my report,
19 it shows where various winding materials, cell can
20 materials, ended up on the floor and it didn't ignite
21 materials.

22 Q Okay.

23 And the areas where they landed were on
24 carpeting, correct?

25 A They were on carpeting.

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1 If you look at page HP 0472, it looks
2 like there is a piece of material that's on a piece
3 of paper behind the keyboard or behind -- in front of
4 the monitor.

5 The diagram on page 37, Figure 33 of my
6 report, shows some material on the armoire.

7 Q I'm sorry. You are giving me two
8 different numbers and I lost you.

9 Are we looking at your report or are we
10 looking at the Allegany fire photographs?

11 A I was looking at both.

12 But if you look at the Allegany fire
13 photographs, HP 0472.

14 Q Okay.

15 Let me look at that. Don't go further.

16 So, 472 shows what it looks like a
17 piece of copper material that's on paper that is
18 below the undamaged external monitor, correct?

19 A Correct.

20 Q And did you make the assumption that
21 that piece of copper material was a piece of battery
22 winding?

23 A That's what it appears to be.

24 Q Was that one of the items that was
25 collected as evidence and examined, do you know?

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1 A I don't know.

2 Q And did you also make the assumption
3 that that piece of battery winding got to that spot
4 directly out of the laptop as opposed to coming off
5 the ceiling or off the wall or banking off something
6 else?

7 A I don't know how it got there.

8 I am just saying --

9 You were asking if materials could
10 sustain high temperatures for a long time and ignite
11 materials.

12 Q Okay.

13 Is there anything in any of the
14 investigators' reports that actually visited the
15 scene that documents that that was the landing spot
16 for that particular piece of battery winding?

17 A I mean, obviously the Allegany Fire
18 Department took a picture of that.

19 Q But is there anything in the report
20 that indicates that they found it there or that it --
21 what its path was before it got there?

22 A Let me look and see.

23 I don't see that level of detail in the
24 report or their photo log.

25 Q And would you agree with me that this

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1 photograph that we are looking at demonstrates that
2 the Allegany Fire Department investigators actually
3 removed the laptop from the shelf to take this
4 picture?

5 A That's correct.

6 (Whereupon, a discussion was held off
7 the record)

8 VIDEOGRAPHER: The time is 4:27 p.m.,
9 and we are going off the record.

10 (Whereupon, a short break was taken)

11 VIDEOGRAPHER: The time is 4:42 p.m.,
12 and we are back on the record.

13 Q Dr. Myers, could you turn to tab 14,
14 which I marked as Exhibit 7?

15 This is an article by Sorensen,
16 S-O-R-E-N-S-E-N, entitled, "A Study of Thermal
17 Runaway Mechanisms in Lithium-Ion Batteries and
18 Predictive Numerical Modeling Techniques."

19 I think you indicated in prior
20 testimony today that after receiving Dr. Martin's
21 report that you looked at some of the references that
22 were articles, that were published articles?

23 A I did.

24 I didn't look at this article, but I
25 did look at some of the articles.

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1 Q Okay.

2 I just want to ask you to turn to the
3 second page of the article, which is page 2 of 16.

4 And there is a graph there.

5 Do you see that?

6 Figure 1?

7 A I do.

8 Q So, we were talking a minute ago about
9 the temperatures that were -- are generated by a
10 thermal runaway reaction and this graph appears to
11 show that, correct?

12 Take a minute to look at it.

13 A No. It looks like it's showing the
14 rate of temperature rise versus temperature during
15 thermal runaway.

16 Q Right.

17 So, the temperatures are on the X axis
18 and the temperature rate of increases is on the Y
19 axis, correct?

20 A Correct.

21 Q And so, the temperatures reached during
22 thermal runaway after it gets to the critical point
23 about 200 degrees Celsius, goes up into the 4 or 500
24 degree Celsius level, correct?

25 A The hottest --

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1 VIDEOGRAPHER: Dr. Myers, you are off
2 frame.

3 THE WITNESS: Sorry.

4 A I would have to look at this a second.

5 Q Sure.

6 A So, you know, in this test they are
7 doing accelerating rate calorimetry or that's what it
8 looks like they are doing based on the Reference 6 in
9 the Figure 1 and the title of the article.

10 So, I mean, the highest temperatures
11 they show here are 400 to 450 degrees Celsius. It is
12 not clear to me if that is the temperature the cell
13 was going to or if they were continuing to heat the
14 cell and causing that temperature. But, you know,
15 clearly there is data between the rate of temperature
16 rise and temperature up to about 300 degrees Celsius.
17 And then, the rate of temperature rise is a flat line
18 after that. So, I'm not sure if that's just they
19 can't measure that temperature rise anymore or what's
20 happening.

21 Q Are you familiar with the temperatures
22 that can be reached though by the internal contents
23 of a battery that goes into thermal runaway?

24 A As I said earlier, I don't have a
25 specific number in my head. But, you know, it can be

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1 hundreds of degrees of Celsius.

2 Q Or up to 1,000 degrees Celsius?

3 A Right.

4 Q Take a look at Exhibit -- sorry -- tab
5 11, which I've marked as Exhibit 8.

6 This is another article that was
7 referenced by Dr. Martin.

8 And my first question is whether this
9 is one that you actually did read before your
10 deposition?

11 A I did.

12 Q Okay. Great.

13 This is an article by Larsson,
14 L-A-R-S-S-O-N, et al.

15 It's entitled, "Gas Explosions and
16 Thermal Runaways during External Heating Abuse of
17 Commercial Lithium-Ion Graphite-LiCoO₂ Cells at
18 Different Levels of Ageing."

19 And you had a chance to review this
20 prior to your deposition?

21 A Correct.

22 Q And this was a study that this group of
23 researchers took lithium-ion battery cells and,
24 first, differentiated them by some being new, some
25 being completely out of charge and some being cycled

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1 through charge/discharge cycles of 100, 200, 300
2 cycles.

3 Is that how you interpret it?

4 A (No verbal response)

5 Q I think Table 3 on page 225 kind of
6 summarizes things pretty clearly.

7 A Yeah. And table 3 and 4.

8 Some of them refer to dead cells.
9 Like, one where the battery went dead during cycling.
10 I am not sure what the cause of the other cells being
11 dead were.

12 Q In any event, they wanted to have
13 different cells at different -- with different levels
14 of abuse and at different points in their life cycle,
15 right?

16 A I am not sure about levels of abuse,
17 but certainly had gone through different numbers of
18 charge and discharge cycles.

19 Q Well, some of them were actually aged
20 or stored at temperatures above what is recommended
21 also. That was another parameter they used.

22 Take a look to see if I am correct on
23 that.

24 A Yeah. I mean, it says stored at 60
25 degrees Celsius. I am not sure if that was above the

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1 temperature recommendation or not.

2 Q Okay.

3 And 60 degrees Celsius is approximately
4 what in Fahrenheit?

5 Like 115?

6 A I would have to do the math. It's
7 somewhere in that range.

8 Q Okay.

9 In any event, so, what they did is they
10 took these batteries in different characteristics as
11 far as the cycling and the charge and the storage
12 temperature and they put them all in a 300 degree
13 Celsius oven, correct?

14 A I don't believe that's correct.

15 Q So, tell me what temperature the oven
16 was?

17 A If you look at Table or Figure 4, it
18 looks like the oven was at approximately room
19 temperature and then which heated up over time.

20 Q To 300 degree Celsius?

21 A Pardon me?

22 Q To 300 degrees Celsius?

23 A In the figure 4, it was only heated to
24 around 200 degrees Celsius. Maybe 250.

25 Q I'm sorry.

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1 Which column are you relying on to say
2 that the oven temperature was 250 degrees?

3 A I am looking at Figure 4.

4 Q Right.

5 But let me see if I can find the
6 reference.

7 Take a look at page 222 under "General
8 Set-Up."

9 Do you see where it says:

10 "The oven was turned on one minute
11 after the start of the test and set to 300
12 Celsius"?

13 A Yes.

14 Q So, does that help you understand that
15 the temperature got to 300 degrees Celsius?

16 A No.

17 I mean, if you read the full sentence,
18 it says:

19 "The oven was turned on one minute
20 after the start of the test and set to 300
21 Celsius utilizing the maximum heating rate
22 capability of the oven."

23 Q Right.

24 So, the cells --

25 If you look at Table 3, the cells went

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1 into runaway thermal runaway between 61 and 73
2 minutes -- or excuse me -- 59 and 73 minutes of being
3 in the oven.

4 Do you agree with that?

5 A That's correct.

6 Q And so, is it your interpretation,
7 then, that after an hour in the oven, it hadn't
8 gotten to 300 degrees Celsius?

9 A So, they show one example test, Figure
10 4, which is Test 7, that if you look at that at --

11 It says major venting and thermal
12 runaway, it shows in red. That's about sixty -- a
13 little less than 62 minutes, which is consistent with
14 Table 3.

15 For Test Number 7, it says thermal
16 runaway occurred at 61 minutes and 43 seconds. So,
17 you can see at that time the oven was up to about 200
18 degrees Celsius.

19 Q So --

20 A Again, if you look at time zero, the
21 temperature is somewhere between probably around 25
22 degrees Celsius, which is about room temperature.
23 So, over the course of the hour, the temperature in
24 the oven is increasing from room temperature to up to
25 about 200 degrees Celsius.

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1 Q So, if I understand --

2 And you are talking about Figure 4,
3 correct?

4 A Correct.

5 Q And Figure 4, at that 61 minutes, did a
6 great jump with these lines?

7 A Correct.

8 Q And you are interpreting that to mean
9 that there was a great jump in the temperature of the
10 oven at that point or the temperature of the interior
11 of the battery cells where the temperature gauges
12 were placed?

13 A So, if you read the -- if you read the
14 caption for Figure 4, it says T 1 through T 6 are
15 battery surface temperature sensors. So, it's not
16 the interior of the battery, but the surface of the
17 temperature. And that the other two temperatures are
18 at the top of the oven, mid and temperature of the
19 oven top. So, the dash lines are the oven
20 temperature and the solid lines are the battery
21 temperature.

22 And so, at around 61 minutes or 62
23 minutes when it goes into thermal runaway, you see
24 that the temperature of the battery goes up
25 significantly. That the temperature of the oven just

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1 continues gradually rising sort of like it was doing
2 the rest of test.

3 Q Okay.

4 So, all of the batteries, though, in
5 this oven had to be in the oven for over -- for
6 approximately 60 minutes before thermal runaway was
7 provoked inside the cells?

8 A I mean, Figure 4 just shows the results
9 from a single test.

10 Q Right.

11 But if you look at Table 3, there is a
12 column, the fifth column over, says thermal runaway
13 and major venting minutes, seconds and there is
14 numbers that range from 59 minutes, 22 seconds to 72
15 minutes -- 73 minutes 36 seconds.

16 A Correct.

17 Q So, that's the time that it took in the
18 oven for the external heat source to cause thermal
19 runaway?

20 A Correct.

21 Q Okay.

22 And those cells were put into the oven
23 without any plastic coatings, right?

24 It was just the metal cells?

25 A I am not sure.

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1 Q Well, it says the external cell
2 temperature was measured.

3 Is there any indication that they
4 didn't put the cells in without the covering that is
5 usually covered when they are in a battery pack?

6 A Let me see if I can see that detail in
7 here.

8 So, if you look at Figure 1, you know,
9 this isn't an 18650 cell. So, it's a different type
10 of cell. I can't tell if there is a plastic coating
11 on a cell or not in that picture. It looks like they
12 put some tape around it probably to hold the
13 thermocouple in place on the outside of the battery.
14 And then it's sitting on a brick.

15 Q Right.

16 And so, it wasn't put in a battery pack
17 similar to what would be in a laptop, correct?

18 A No.

19 Q With a plastic coating?

20 A No. It's a different type of battery.
21 I think it's a prismatic cell that is contained in an
22 aluminum can.

23 Q Okay.

24 Now, once the thermal runaway --

25 But it's a lithium-ion battery,

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1 correct?

2 A Correct.

3 Q Now, Table 3 also shows the extent of
4 the thermal runaway reaction.

5 It says, "thermal runaway outcome time
6 as minutes, seconds."

7 Do you see that?

8 A I see that column.

9 Q So, for instance, Test Number 3, the
10 thermal runaway began at 68:16. There was a gas
11 explosion 14 seconds later and then there was 32
12 seconds of fire and then 14 seconds of small flame
13 after that.

14 Do you see all of that?

15 A I do.

16 Q So, that would mean that that
17 particular reaction went on from 68:16 for 14 seconds
18 'til there is an explosion and for 32 seconds which
19 would be 48 seconds total and then another 14 seconds
20 when it gets it to a full minute and two seconds,
21 correct?

22 A I am not sure if you are supposed to
23 add all those times together or not.

24 Q How do you interpret that?

25 A It's unclear. I mean, there is a gas

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1 explosion at 68:30. Then it says oven door fully
2 opened. Camera still attached. Observes the --
3 fire. It says a 32 second fire. 40 second small
4 flame fire above cell bank.

5 I am not sure what it exactly
6 described, if those time increments are from the time
7 of the thermal runaway or from the time of the gas
8 explosion.

9 Q In any event it appears to be, at a
10 minimum, if you want to interpret it the way you want
11 to interpret it, which is not how I would interpret
12 it, but that it would be 46 seconds of fire and
13 flame, correct?

14 A Maybe 32 seconds.

15 It doesn't provide any more detail.

16 Q So, you are interpreting this as the
17 minimum possible.

18 And I am just wondering did you have
19 some resource that you are looking at or that you
20 have seen that you can point me to that tells you
21 that thermal reactions run their course in seconds?

22 A As I said earlier, I point to the
23 report of Dr. Horn. And like I said, there is a few
24 differences between these cells. These are not 18650
25 cells. These are larger cells than an 18650 cell.

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1 It's a different form factor. So, it's not a
2 one-to-one correlation to the 18650 cells.

3 Q How about cell number 8, which says it
4 was 81 seconds of fire?

5 Do you interpret that to be something
6 less than a minute?

7 A It sounds like there is 81 seconds of
8 fire in that case. So, that sounds like it is more
9 than a minute.

10 Q Okay.

11 So, you are relying entirely, then, not
12 on any research that you have done, but in Dr. Horn's
13 report did he provide the maximum time period that a
14 thermal runaway reaction in an 18650 battery cell can
15 last that you relied on then to form your opinion?

16 A I am relying on Dr. Horn's report. I
17 have to find the exact location. I am relying on
18 page 35 of Dr. Horn's report.

19 Q Are you saying the sentence:

20 "In my experience, thermal runaway of
21 an 18650 battery cell completes in seconds
22 once it's started"?

23 A Correct.

24 Q Okay.

25 And so, that's based on Dr. Horn's

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1 anecdotal experience? He has no references in his
2 report to where he got that information.

3 It is his personal anecdotal experience
4 that you relied on?

5 A I am relying on his experience, yes.

6 Q Okay.

7 And he doesn't say how many seconds?

8 A He says seconds.

9 Q Correct.

10 So, that could be two seconds. It
11 could be ten seconds. It could be 50 seconds.

12 Right?

13 A I would interpret him saying seconds to
14 be less than a minute.

15 Q Okay.

16 And did you --

17 You worked with Dr. Horn, right?

18 He is with Exponent as well?

19 A I do.

20 Q Did you talk to him before you came to
21 your opinion of how many seconds he says it takes to
22 complete a thermal runaway reaction in an 18650 cell?

23 A I did talk to him about his report.

24 Q And what did he tell you that you could
25 recall that he relied on?

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1 In other words, did he do some kind of
2 testing where he used a stopwatch and kept track of
3 the cells as they went into thermal runaway?

4 A I don't think he specifically told me
5 what he did, but I know he conducted a lot of testing
6 historically of cells going into thermal runaway.

7 Q And did you talk to Dr. Horn about
8 whether he was -- had an opinion as to whether the
9 cells in a battery pack that go into thermal runaway
10 can do that sequentially as opposed to
11 simultaneously?

12 A I don't recall having that specific
13 conversation.

14 Q Is it your opinion that that's
15 possible?

16 A In some situations that can happen,
17 yeah.

18 Q And if that situation did occur, then
19 thermal runaway could have occurred in one cell and
20 be occurring in a different cell until Carol
21 Marcellin walked in, correct?

22 A I would refer those questions to Dr.
23 Horn about the exact timing that he thinks would have
24 occurred with the cells in this case.

25 Q But your opinion is based on whether

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1 thermal runaway occurred before or after the radiant
2 heat occurred based upon Carol Marcellin's
3 observations of projectiles being ejected from the
4 laptop, correct?

5 A Correct.

6 Q And your opinion is based on the
7 concept that it would be impossible for the smoke
8 alarm to have gone off and the fire to have created
9 smoke and woken up Carol Marcellin if it started with
10 thermal runaway because that reaction would have been
11 long since done by the time she got to the office,
12 right?

13 A Correct.

14 Q But if the cells went in sequence and
15 they didn't reach thermal runaway temperatures
16 simultaneously in each cell, and one cell created
17 heat in order to heat up the next cell, then that
18 would be a much more protracted time period before
19 the last cell would be ejecting its contents,
20 correct?

21 A So, I think what you are saying if four
22 cells went off one after the other it would be longer
23 than if all four cells went off at the same time?

24 Q Right.

25 A That's correct.

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1 Q And so, if each took up to a minute and
2 there was some delay in between one reaching the
3 temperature after the other reached the temperature
4 that's necessary for thermal runaway, then it would
5 be difficult to predict precisely how much time would
6 go by between the ejection of the material from the
7 first cell and the finishing of ejection of material
8 from the last cell?

9 Would you agree with that?

10 A As I said earlier, I would defer to Dr.
11 Horn for the exact timing that he thinks occurred
12 with the batteries going into runaway.

13 Q Well, the exact timing isn't reflected
14 in his report, is it?

15 All he says is:

16 "In my experience battery cell
17 completes in seconds once it has started."

18 A Correct.

19 Q He makes no opinion with regard to
20 whether the cells all went into thermal runaway
21 simultaneously.

22 A I don't see where he gives more
23 specific information about that, no.

24 Q When you came on your opinion based on
25 Dr. Horn's opinion that we just read, in his

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1 experience "battery cell completes in seconds once it
2 has started," did you interpret that to mean that all
3 four cells that went into thermal runaway went into
4 thermal runaway simultaneously?

5 A Not necessarily, no.

6 Q And so, if you didn't assume that, then
7 over what period of total seconds did you come to the
8 conclusion that it took for all four cells to go into
9 thermal runaway?

10 A It didn't have a specific number. I
11 would say within a minute or two.

12 Q Your opinion, then, is that all four
13 cells went into thermal runaway within two minutes?

14 A Approximately. I don't have --
15 I didn't have a specific number in
16 mind. But in a short timeframe, shorter than the
17 timeframe for the spread of the fire and
18 Ms. Marcellin to walk down to the room, walk away
19 from the room, walk back to the room and observe the
20 batteries going into thermal runaway.

21 Q So, I am having trouble with this.

22 So, you are saying whatever time it
23 was, it was not enough time for her to do all that?

24 Is that what you are saying?

25 A No. I am saying it wasn't --

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1 You know, it was significantly less
2 than the time for her to do all of that.

3 Q What numbers are we talking about?

4 In other words, what is your estimate
5 of the time it took for the smoke alarm to go off
6 outside the office and for her to go down the hall
7 and witness the thermal runaway reaction?

8 How much time are you estimating went
9 off -- went by?

10 A Well, for the time -- for the smoke
11 alarm --

12 The difference in time between the
13 smoke alarm going off and her going down to the
14 hallway?

15 Is that what you are asking?

16 Q Yeah.

17 Was that a minute? Ten minutes? A
18 half hour?

19 A I would say a few minutes. A minute to
20 a few minutes.

21 Q It could have been one minute, right?

22 A Yeah. I would say between -- smoke
23 detector --

24 Well, you are referring to a few
25 different things.

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1 But the smoke detector that notified
2 her of the fire she is describing is the smoke
3 detector outside her bedroom that she then silenced
4 and then went down to there. So, she discusses
5 walking down and --

6 Q Do you think --

7 A Pardon me?

8 Q Do you think she walked slowly or she
9 might have been -- had some haste in her step to find
10 out what was going on?

11 What was your assumption?

12 A That she would have been walking a
13 normal pace. She said the lights were out. She
14 didn't have glasses or contacts on. I think she
15 would have obviously not been running. She is
16 approximately 80 years old. So, I am thinking a
17 minute to a few minutes.

18 Q A few minutes like 10 minutes, 15
19 minutes, 20 minutes?

20 A Like, one to five minutes.

21 Q So, somewhere between one to five
22 minutes?

23 A Correct.

24 Q And what is your estimate of how much
25 time it would take -- assuming that the smoke alarms

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1 were wired together and it was the smoke alarm by the
2 office that went off -- how much time after the
3 initiation of the lighting of the --

4 Well, let me ask this question.

5 Withdraw that question.

6 Does a thermal runaway reaction by
7 itself create smoke and heat?

8 A A thermal runaway reaction, you know,
9 will typically make flames or it can make flames if
10 the gases being emitted, ignite. It doesn't
11 typically generate any smoke.

12 Q Does it generate any smoke?

13 A Yes, it can generate smoke.

14 Q When the thermal runaway reaction
15 occurs and generates flame, it can light, for
16 instance, plastic on fire, correct?

17 A Depending on the duration, it can do
18 that. We don't see burnt material near the laptop
19 here. We don't see burnt material where it ejected
20 from the laptop landed or ejected from the cells
21 landed.

22 Q Okay.

23 My question was can the flames from the
24 thermal runaway reaction in a cell cause the plastic
25 to burn?

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1 A In some cases it can, yes.

2 Q And does plastic burning create smoke?

3 A It can, yes.

4 Q So, if the thermal runaway in each cell
5 happens sequentially, you are saying that it would be
6 impossible for the smoke alarm to go off and Ms.
7 Marcellin to come down and witness any of the thermal
8 runaway reaction?

9 That's your opinion?

10 A Correct.

11 Q And that's based upon Dr. Horn's
12 statement, "In my experience, thermal runaway of an
13 18650 battery cell completes in seconds once it has
14 started"?

15 That's what you are basing that opinion
16 on, on timing?

17 A And the timing for fire to grow.
18 Produce enough smoke to, you know, first fill the
19 room. Then spread to other portions of the building
20 where it can activate smoke detectors. Make the
21 observations that Ms. Marcellin that she had, that
22 she can smell smoke in the bedroom. That she could
23 see and observe smoke in the family room. See smoke
24 pouring out of the office.

25 Q So, if I understand correctly, then,

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1 you are saying that it would take the fire being at a
2 high level consuming a lot of materials in order for
3 the smoke alarm outside the office to go off?

4 A It would in some length of time.

5 And also, for her to make the
6 observations that smoke is coming out of the room.

7 Q What length of time would it take for
8 the smoke detector to be activated outside the office
9 in your professional opinion?

10 A It is going to be depend on the
11 initiation of the fire. If it's a small smoldering
12 fire that's not putting out much smoke, it's going to
13 take a very long time. If it's a fire that's growing
14 more rapidly, it is going to take a smaller length of
15 time. But, you know, I am estimating on the order
16 of, say, three minutes to a half hour depending on
17 really what the cause of the fire is and how long it
18 takes for the fire to grow.

19 Q So, if a fire is sufficient to cause a
20 thermal heat layer that produces radiant heat to
21 create thermal runaway, is that fire sufficient to
22 cause a smoke alarm to go off?

23 A Yes.

24 Q And even before it got to the level
25 that it could produce radiant heat to cause thermal

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1 runaway, it will set off a smoke alarm, correct?

2 A I am not sure I understood that
3 question.

4 Q So, your scenario is that this fire had
5 built up to such an extent that it caused a thermal
6 heat layer to form sufficient for it to create
7 thermal runaway in the cells.

8 And my question is when in that
9 sequence of events would the smoke alarm likely go
10 off?

11 Wouldn't the smoke alarm go off before
12 the heat layer got to the extent to cause thermal
13 runaway?

14 A I don't understand your question.

15 Q All right.

16 The sequence of events you have here is
17 that the fire grew to such an extent that it either
18 went from the mysterious candle on the couch into the
19 office or it started somewhere in the office -- you
20 don't know -- but it caused enough of a heat layer to
21 then transfer the heat to the battery cells through
22 the plastic to heat them up to get to somewhere in
23 the 150 to 200 Celsius range?

24 That's your opinion, right?

25 A Correct.

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1 MS. WANEMAKER: Objection to form.

2 You can answer.

3 Q Where in that sequence of events would
4 the fire have created enough smoke to set off the
5 smoke alarm outside the office where all this was
6 going on?

7 A So, it's going to depend how smokey the
8 fire is and the actual dynamics of the fire.

9 Q Well, you examined the photographs of
10 the fire.

11 Are you saying that this fire was
12 likely going on for 10 or 15 or 20 minutes creating
13 that thermal heat layer that could then transfer that
14 heat to the battery cells without setting off the
15 smoke alarm?

16 A No. I think, as I described, there is
17 a variety of ignition mechanisms that can start a
18 fire. There is examples of slow smoldering fires
19 going on for a substantial length of time before they
20 propagate into flaming combustion or before they were
21 witnessed. So, that can take a substantial length of
22 time.

23 Q So, a slow smoldering fire you are
24 saying was potentially the cause of a thermal heat
25 layer that came down and transferred enough radiant

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1 energy heat to the battery pack to cause thermal
2 runaway?

3 Is that your testimony?

4 This was all caused by a small
5 smoldering fire?

6 A No, that is not my testimony.

7 Q So, in order for the fire to create
8 that much heat and thermal layer, it would have to be
9 enough to set off the smoke alarm, right?

10 A It would be about that size fire where
11 you are filling the hot layer in the room that you
12 would set off smoke detectors.

13 We've had this question whether it set
14 off the smoke detector near the office or whether it
15 set off the smoke detector at the opposite end of the
16 building.

17 Q I am asking you to assume for purposes
18 of this question that it set off the smoke detector
19 near the office.

20 Okay?

21 Now, let me just ask you this question.

22 If the smoke detector near the bedroom
23 was independently battery powered and not connected
24 to the other smoke detector, when she turned that one
25 off, would it automatically turn off the one at the

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1 office?

2 A No.

3 Q And is there any testimony that when
4 she turned off the one smoke detector, she continued
5 to hear another smoke detector?

6 A I believe there was.

7 She said that she couldn't turn off the
8 other smoke detector because she couldn't turn off a
9 circuit breaker. She would have to turn off a
10 circuit breaker to do that. It seems like she had
11 experience with what it would take to turn off that
12 smoke detector.

13 Q You are saying her testimony said that?

14 A She said that in her deposition, yes.

15 Q Well, we will find that testimony.

16 Thank you.

17 So, getting back to the question.

18 The smoke detector outside the office
19 would have gone off, in your view, at approximately
20 the same time that the heat layer was sufficient to
21 cause thermal runaway in the battery pack?

22 A That's correct.

23 Q And that smoke detector wouldn't have
24 gone off in the build-up to that heat layer of
25 getting to that level?

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1 A It could potentially. It would have
2 been around that length -- that same length of time
3 or that stage of the fire.

4 Q I don't think either you or Dr. Horn
5 indicated the amount of time it would take for the
6 heat layer to transfer that energy to the battery
7 pack to cause thermal runaway.

8 Do you have --

9 Have you come up with an estimate or
10 has Dr. Horn come up with an estimate?

11 A I believe Dr. Horn has.

12 Q What was Dr. Horn's estimate of the
13 amount of time it would take for the thermal heat
14 layer to transfer heat to the battery pack and cause
15 thermal runaway?

16 A It's going to depend on the rate of
17 growth of the fire and how quickly you establish that
18 heat layer.

19 Q Your entire opinion, I think, depends
20 on the timing of the thermal runaway.

21 So, my question is:

22 Have you made any estimation of how
23 much time it would take for this particular fire
24 based upon the combustibles in this particular room
25 to cause heat sufficient to cause thermal runaway?

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1 A It's really going to depend on the fire
2 growth, scenario of the materials burning and the
3 closet that hasn't been tested by anyone.

4 Q Well, then, you have no idea, then, how
5 long it took for the fire to create enough heat to
6 cause thermal runaway in the battery pack?

7 Is that what you are saying?

8 A No. I described this a few times.

9 You can have different ignition
10 mechanisms for a fire. You can start materials that
11 go into rabid combustion very quickly. You have fast
12 fire growth, as I described earlier. You can have
13 smoldering emission that takes a very long time to go
14 into flaming emission.

15 Typically, when you ignite materials
16 like this, you are looking at minutes to tens of
17 minutes before you build up a significant hot layer
18 and start igniting materials.

19 Q I wasn't asking you about every
20 possible example.

21 I am talking about the fire in this
22 room based upon the evidence you have seen based upon
23 what was combustible.

24 Are you saying it would have taken --

25 The fire would have to be going on for

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1 10 or 15 minutes to create the thermal heat layer,
2 right?

3 A No. I said it could be from a few
4 minutes to tens of minutes. Depending on the fire.

5 Q Which was it in this case?

6 A We weren't there. We didn't see the
7 time rate growth of the fire.

8 Q And once the thermal heat layer
9 develops, then what is the amount of time it would
10 take the thermal heat layer to transfer enough heat
11 into a battery cell to cause thermal runaway?

12 A You are looking at tens of seconds.

13 Q So, tens --

14 You believe that the thermal heat layer
15 can push a cell into thermal runaway in ten seconds?

16 A I said tens of seconds.

17 Q Okay.

18 Well, how many tens of seconds?

19 Did you see any research on this?

20 A So, I've said this several times. This
21 is something that Dr. Horn has researched more than I
22 have. So, I don't have any numbers in front of me.
23 You know, we have here the --

24 Q Is there anything in Dr. Horn's report
25 that tells you the amount of time that he estimates

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1 it took for the thermal heat layer to transfer heat
2 to the battery cells to cause thermal runaway?

3 A Let me go back to his report.

4 So, on page 34 of his report near the
5 top he describes:

6 "According to the HP representative,
7 Mr. Lee Atkinson, these materials are
8 comprised of ABS, acrylonitrile butadiene
9 styrene, a thermoplastic polymer. While
10 this polymer is amorphous and does not have
11 an exact melting point, depending on the
12 composition, the material -- temperature
13 would likely be in the range of 85 to 115
14 degrees Celsius. And the process
15 temperature working slow into molds as if
16 melted is in the 230 to 270 degrees Celsius
17 range. Exposure of battery packs at
18 temperatures in these ranges for any
19 extended period of time could absolutely
20 initiate self-heating and ultimately
21 thermal runaway cells. Especially if they
22 had been previously exposed to conditions
23 outside of specifications."

24 Q So, you are saying that he estimated
25 for any extended period of time?

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1 Is that your time estimate?

2 A That's what he has in his report.

3 You asked me what he gives for time.

4 Q What did you interpret that to mean in
5 numbers?

6 What is "an extended period of time"?

7 A So --

8 Q Is that a scientific term?

9 In other words, when you do studies, do
10 you refer to as "extended period of time" as a
11 scientific term of how much time it would take for a
12 reaction to occur?

13 A People do use that term.

14 Q In your published work, instead of
15 using numbers, do you use word descriptors as vague
16 as "an extended period of time"?

17 A I would have to look back and look at
18 everything I have written and see if I've ever done
19 that.

20 Q So, if you were doing an experiment and
21 you wanted to find out how much time it took for
22 something to happen, one of the ways you might
23 describe that in a scientific paper would be, "It
24 happened in an extended period of time"?

25 Is that what you are saying?

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1 A I don't know whether I ever said that.

2 Q Well, I am saying would you say that
3 as a scientist?

4 If you were trying to determine how
5 much time it took for a certain event, a reaction to
6 take place, would you describe it as "an extended
7 period of time"?

8 A You are asking me hypotheticals that I
9 haven't thought about.

10 Q So, tell me.

11 Your opinion is based upon his opinion,
12 right, of the transfer of heat from the heat layer to
13 the battery pack that can cause thermal runaway?

14 You relied on him?

15 A He has reviewed testing of batteries
16 going into thermal runaway more recently than I have.
17 So, I do rely on him for that. You know, the
18 timeframe --

19 Q So, what we have in his report, that
20 you found, is his description of "an extended period
21 of time" being his time estimate, right?

22 A Correct.

23 Q So, how did you interpret "an extended
24 period of time" when you came to your opinions based
25 on his opinion?

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1 A I interpreted that to mean roughly,
2 like I said earlier, from tens of seconds to a few
3 minutes.

4 Q So, "an extended period of time" is
5 tens of seconds to two minutes?

6 MS. WANEMAKER: Asked and answered.

7 Objection based on the fact that it's
8 been asked and answered.

9 COURT REPORTER: There's feedback.

10 (Whereupon, a discussion was held off
11 the record)

12 Q Tens of seconds to how many minutes?

13 A To one or two minutes.

14 Q One or two minutes.

15 Okay.

16 Thank you.

17 If we can turn back to your report,
18 then, specifically your opinion section and page 44
19 going over to page 45.

20 You with me?

21 A Yes.

22 Q You say in Opinion 2:

23 "The description of events provided by
24 Ms. Marcellin, in combination with the
25 location of the cells and debris of the

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1 incident 2011 HP Pavilion notebook,
2 indicate that the thermal runaway event was
3 likely a result of radiant heat exposure
4 from a pre-existing fire."

5 Did I read that correctly?

6 A You did.

7 Q And that would be radiant heat exposure
8 from ten seconds to one to two minutes based upon
9 what we discussed, right?

10 A Correct. Once the radiant heat is in
11 both sufficient energy, yes.

12 Q And just to clarify, it's your opinion
13 that the fire -- the time of the fire initiation to
14 the time it created the radiant heat sufficient to
15 start that tens of seconds to one to two minutes
16 could vary anywhere from two minutes to 30 minutes,
17 right?

18 A Or longer. I mean, smoldering fires
19 sometimes take much longer to transition to flaming
20 emission.

21 Q And you are saying that if it took 30
22 minutes, it's likely that the smoke alarm wouldn't
23 have gone off during that 30 minute period?

24 A Correct.

25 Q Even though a thermal heat layer of

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1 great heat was building up?

2 A If you just have small smoldering
3 emission or small smoldering materials, you are not
4 going to be generating significant heat.

5 Q How about smoke?

6 A Not much smoke either.

7 Q And the smoldering fire that you are
8 envisioning is from the unknown source that you
9 haven't -- an emission source, right?

10 A Correct.

11 Q And unknown location?

12 A Correct.

13 We talked about, you know, if you
14 believe Ms. Marcellin's testimony about where she
15 observed fire, then it's most likely that the fire
16 started in the closet based on the fire patterns.

17 Q Okay.

18 Now, if you turn to the next page, you
19 have a Subdivision C.

20 You say:

21 "There is no evidence indicating the
22 presence of battery debris in the closet.
23 If present, this debris likely would have
24 withstood the heat from the fire and
25 could have been collected during the

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1 subsequent fire investigation."

2 Do you see that?

3 A I do.

4 Q And do you now know that that statement
5 is incorrect?

6 A No.

7 Q So, you are assuming that the battery
8 debris that was collected at the scene by all of the
9 investigators, including Mr. Gorbett, did not occur?

10 A I don't recall saying that.

11 Q Well, you didn't talk to Mr. Gorbett,
12 right, or did you?

13 A I didn't. But whether I talked to Mr.
14 Gorbett or not, I don't recall saying what you just
15 said.

16 Q Oh, I'm sorry. I thought you said you
17 didn't recall him saying that.

18 So, do you agree that battery debris
19 was, in fact, found in the closet where the fire
20 originated?

21 A I am aware that it wasn't included in
22 the initial reports by your experts. But in a
23 rebuttal report it is now being claimed that some
24 battery debris was found in the closet. And the only
25 picture I have seen of that debris is in the rebuttal

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1 report and shows material that is now at that point
2 not in the closet but on the ground out in front of
3 the closet saying that it had come from the closet.

4 Q Right.

5 And Mr. Karasinski also testified that
6 all of the other investigators were involved in that
7 process of removing the debris from the closet and
8 going through it.

9 Were you aware of that?

10 A I haven't seen his deposition
11 testimony, no.

12 Q One thing you could do is contact Mr.
13 Gorbett and find out if Mr. Karasinski is telling the
14 truth because he was there.

15 He witnessed it, right?

16 A I don't know whether he witnessed that
17 or not, no.

18 Q Well, the best way to find out is to
19 call him and find out, right?

20 A I don't know.

21 Q You don't know if calling him and
22 asking him if he witnessed that would be the best way
23 to find out if he witnessed it?

24 MS. WANEMAKER: He already answered the
25 question.

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1 A I don't know whether he saw that or
2 observed that or not.

3 Q I know you don't know.

4 But there are ways to find out things
5 we don't know, right?

6 A Potentially.

7 Q And one way would be to ask the person
8 if he witnessed that. That would be one way to do
9 that.

10 A Correct.

11 Q You could say, "Mr. Gorbett,
12 Mr. Karasinski says that you were with him when they
13 removed the battery debris from the closet and
14 identified it. Is that true?"

15 You can ask him that question?

16 A I couldn't ask him that because I am
17 not aware that that happened. I haven't seen that
18 Mr. Karasinski said that.

19 Q Well, Mr. Karasinski's report says
20 that, and you read that, correct?

21 A I don't see him saying that, no.

22 Q Well, he says that they found the
23 battery debris in the closet and all the
24 investigators supervised taking it out of the closet.

25 Withdraw that question.

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1 A I don't believe he said that in his
2 report. But if you can point me towards that --

3 Q I will withdraw the question.

4 So, are you assuming, then, that
5 Mr. Karasinski made up that they found battery debris
6 in the closet?

7 Are you discounting that because you
8 think it is a fabrication?

9 A I didn't say that. It's quite
10 surprising to me if he feels that that was what
11 actually started the fire that he wouldn't have
12 included that in his preliminary affirmative report
13 where he is contending that debris from the battery
14 started the fire.

15 Q Well, he said debris from the battery
16 started the fire in the closet and that was the
17 origin of the cause.

18 That was in his first report, correct?

19 A Correct.

20 And there is many photos in both his
21 and Mr. Litzinger's initial reports showing all sorts
22 of pieces of battery debris. There is pictures that
23 they were identified as individual items with flags.
24 They were shown for the specific items in the lab
25 exam. But I guess the one piece that they actually

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1 thought started the fire wasn't included as an
2 individual item in that initial report. So, I find
3 that a bit surprising.

4 Q Okay.

5 And it's so surprising that one thing
6 you could do is check its accuracy with the one
7 person that HP hired to actually be there for the
8 investigation, right?

9 A Potentially.

10 Q And you haven't asked to do that?

11 A I'm sorry?

12 What was that?

13 Q You haven't asked the HP lawyers to
14 contact the fire expert that they hired to go to
15 evaluate the scene to find out if battery debris was,
16 in fact, found inside the closet where the fire
17 originated?

18 A No, I wasn't aware of someone saying
19 that Mr. Gorbett had observed that and agreed that it
20 was in the closet until you made these
21 representations during my deposition.

22 Q So, what do you think?

23 He went out and had a cigarette while
24 they were doing that?

25 Is that your assumption?

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1 A I don't know whether or not he smokes.

2 Q So, you --

3 A I have never made an assumption that he
4 was out smoking a cigarette. It sounds like
5 something that you are proposing.

6 Q Well, what I am saying is if the
7 presumed origin of the fire was inside the closet and
8 HP hired Mr. Gorbett to go evaluate the origin of the
9 fire and the cause of the fire, are you suggesting
10 that Mr. Gorbett wouldn't stay around for the
11 investigation of the debris in the closet?

12 A No, I am not.

13 Q Okay.

14 A What I said is that I am surprised if
15 this debris was found in the closet and was believed
16 to be what started the fire in the closet, that it
17 wouldn't have been preserved as a specific evidence
18 item like all the other pieces of debris that were
19 found in areas where the debris obviously didn't
20 start a fire.

21 Q And the debris that was collected, the
22 battery debris that was on the list of materials, are
23 you saying that this piece was not among those
24 pieces?

25 A It wasn't separated as a separate piece

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1 of material as many of these other evidence items
2 were.

3 Q And under 921, fire investigators are
4 supposed to keep notes, right?

5 A They are supposed to document the
6 scene. Notes are one way of doing that.

7 Q Were you able to check to see if you
8 got Mr. Gorbett's notes, as you say in your report?

9 A I don't have his notes, as I said
10 earlier.

11 Q You said you didn't remember if you had
12 his notes.

13 Did you check in the meantime and can
14 swear under oath that you never got his notes?

15 A I checked and I don't have his notes.

16 Q Okay.

17 So, your answer is that you've
18 affirmatively looked at the materials that were sent
19 to you and what you said in your report was
20 inaccurate and you never got his notes?

21 A Correct. What was listed in the
22 materials reviewed was incorrect.

23 Q Okay.

24 And you are not interested in what
25 Mr. Gorbett's notes say?

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1 A They weren't provided to me. I haven't
2 seen the notes from your experts. I haven't seen the
3 notes from --

4 Q Actually, you have seen the notes --
5 We produced at least to HP's attorneys
6 all photographs and all documents that were created
7 by FRT. We also asked for Mr. Gorbett's similar
8 records. We haven't gotten them. So, that's
9 inaccurate.

10 Whether you've seen them or not is not
11 a problem with us. It's a problem with HP's lawyers.

12 A What I said is not inaccurate. I have
13 not seen your expert's notes. I haven't seen your
14 expert's photographs other than the ones that were
15 put in the reports.

16 Q So, here is my question.

17 In your report, one of the bases for
18 your opinion is that no debris was found in the
19 closet, right?

20 That's point C of your second opinion.
21 Page 45.

22 A Yeah.

23 Q You said:

24 "There is no evidence indicating the
25 presence of battery debris in the closet.

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1 If present, this debris likely would have
2 withstood the heat from the fire and
3 could have been collected during the
4 subsequent fire investigation. Therefore,
5 the ejecta from the batteries that went
6 into thermal runaway could not have
7 initiated a fire in the closet. To this
8 end, the left armoire door would have at
9 least partially shielded the closet from
10 ejecta, consistent with these
11 observations."

12 Are you assuming that that's a correct
13 statement based upon what Mr. Karasinski's
14 photographs and testimony has been in his report?

15 A So, again, I haven't seen
16 Mr. Karasinski's testimony. I have seen his rebuttal
17 report where he does show a picture of debris out in
18 front of the closet that he said was taken from the
19 closet.

20 Q Right.

21 So, my assumption is do you assume that
22 he is not telling the truth and therefore your
23 statement is true or do you assume that he was
24 telling the truth and your statement is false?

25 A At the time I wrote my report there was

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1 no evidence of that. He has produced new photographs
2 and described where debris came from in his rebuttal
3 report. So, at the time I wrote my report, that was
4 a true statement.

5 Q Okay.

6 And now that you know what
7 Mr. Karasinski's rebuttal report says and you haven't
8 seen his testimony, but at least you have seen his
9 rebuttal report and photographs, are you still
10 sticking to your position that is stated in
11 subparagraph C, that there was no evidence indicating
12 the presence of battery debris in the closet?

13 Is that still your opinion?

14 A Can you wait a minute while I read his
15 report?

16 So, if I accept his statement as being
17 correct, that that came out of the material, then now
18 there is evidence that there was battery debris in
19 the closet. But again, as I said earlier, it's very
20 surprising that if he felt that that debris was what
21 started the fire, that that would have been
22 documented in his affirmative report.

23 Q So, again, I am just asking are you
24 sticking with item C, under opinion number two, as a
25 justification for your opinion? Number two.

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1 Or are you now going to eliminate that
2 as one supporting item from your opinion? Number
3 two.

4 A So, I think I just answered your
5 question. That there is now evidence if you accept
6 his representation in his report that battery
7 material came from the closet. I haven't had an
8 opportunity to see any more detailed photographs of
9 it. Like I said earlier, I am surprised that if that
10 was a piece of battery debris that was in the area of
11 origin where it started the fire, it would have been
12 identified as an individual object and documented and
13 observed prior to this rebuttal report.

14 If you look at Mr. Litzinger's report,
15 he has a whole section where he has pictures of 12
16 different items that are battery debris, but none of
17 those are that item.

18 Q I think you said you read
19 Mr. Litzinger's testimony, right?

20 A I have.

21 Q And you don't recall the part of his
22 testimony where he described that they mark the
23 pieces that were on the floor to prevent anyone from
24 disturbing it. And that's what that photograph was
25 of. Not intended to depict all of the debris that

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1 they found.

2 You don't recall that testimony?

3 A I don't recall that specific testimony,
4 no.

5 Q Is it common when you have debris like
6 that, that might be important evidence, to mark its
7 location and remove it before it can be disturbed so
8 that when the investigators come in and look for
9 further evidence, that they don't change the way that
10 evidence was found?

11 A If it's important evidence, yes.

12 Q Okay.

13 So, in fact, what Mr. Litzinger did was
14 take photographs of the battery debris that was on
15 the carpet that was visible to everyone before
16 everyone got into the office to do a more thorough
17 investigation. And that's what 921 requires.

18 A Is that your testimony or is that a
19 question?

20 Q That's a question.

21 A You keep saying me --

22 I am not clear. I don't --

23 Q Just put a question mark after my
24 statements and they are questions. Real easy.

25 Is 921 --

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1 Is that consistent with 921 to go in
2 and document where physical evidence is found before
3 the scene gets disrupted by multiple investigators?

4 A That's sometimes done in fire
5 investigations, yes.

6 Q Okay.

7 And that was done long before in the
8 course of events of the investigation.

9 But the picture that you are talking
10 about was taken long before they went in and examined
11 the contents of the closet?

12 Is that true?

13 A I didn't understand what you said.

14 Q Okay.

15 So, is it your assumption that at the
16 time Mr. Litzinger took the picture that has the
17 numbered cones on it of the location of the battery
18 cells, that at that time he took the picture, they
19 had already gone into the closet and done the
20 investigation of the materials in the closet?

21 A I haven't seen the specific times of
22 when the different pictures were taken. I didn't
23 make an assumption.

24 Q You said you read Mr. Litzinger's
25 testimony.

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1 Didn't he say in there that that was
2 the order of events?

3 A I don't recall whether he said that or
4 not, no.

5 Q Okay.

6 So, getting back to it --

7 I am sorry.

8 I just want to nail this down and we
9 will be done.

10 For item number 2, then, you have three
11 different items of evidence that support your opinion
12 number two. The first part is A, which is based on
13 Ms. Marcellin's testimony. The second part is that
14 four of the six cells went into thermal runaway. And
15 the third part is that there was no evidence of
16 battery debris in the closet.

17 Is it still your opinion that those
18 three items of evidence support your opinion?

19 A So, I described earlier. It's now
20 being represented that there was battery debris in
21 the closet. Unfortunately, there is -- apparently no
22 pictures taken before that was removed in the closet
23 showing where it was in the closet, what it was near.
24 It seems to be lightweight foils similar to what
25 we've seen in other areas of the room that didn't

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1 ignite material. So, I still don't see evidence that
2 that could have ignited materials in the closet.

3 Q So, that's helpful.

4 So, you are saying that it's your
5 opinion that that foil was insufficient to cause a
6 fire in the closet?

7 A That's how it appears. The only photo
8 we have are these photos shown right here of this.

9 Q And that's your opinion based upon your
10 review of the photo?

11 A Correct.

12 Q And do you have some experience in
13 determining whether foil of that size is capable of
14 causing combustibles to ignite?

15 A So, that's described earlier today. If
16 you look at other debris on the desk, at other
17 portions of the room, they didn't ignite materials.

18 Q Okay.

19 So, that was what your opinion is based
20 on, is your observations of photos of other pieces of
21 foil that were found at the scene?

22 A From foil caps. Other pieces of ejecta
23 on the scene that didn't ignite materials.

24 Q And so, because they didn't ignite the
25 materials they landed on, in your view it's

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1 impossible for the foil that was found in the closet
2 to ignite combustibles that were in the source area
3 of the fire as you determined it?

4 MS. WANEMAKER: Objection to form.

5 A Was that a question?

6 Q Yeah.

7 I am saying in your opinion is it that
8 foil was incapable of starting the fire in the source
9 area that you determined was the source area?

10 A It doesn't appear that that it would --

11 It appears that it's lightweight foil
12 similar to other materials that were on paper, on
13 other objects around the room, that didn't ignite
14 materials.

15 Q And the one that was on paper, was the
16 one that you showed me in the picture that was -- you
17 determined you had no idea how it got there, right?

18 A I have no idea how the piece got there
19 either.

20 I don't think we know how any object in
21 the room got where it got.

22 Q What methodology did you use to rule
23 out that a foil from a thermal runaway reaction would
24 be hot enough to cause a fire?

25 Did you do any research on that?

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1 A I reviewed my --

2 I said that it would be unlikely to
3 ignite the materials based on reviewing the other
4 materials that were sent around the room and didn't
5 ignite materials.

6 Q But the candle would have been more
7 likely to have lit the couch than a piece of hot
8 metal would have been likely to light the
9 combustibles in the closet, correct?

10 A A candle would certainly be more
11 likely --

12 An open flame from a candle would
13 certainly be more likely to ignite something than a
14 piece of lightweight foil with low thermal mass, yes,
15 I agree with that.

16 Q And the candle on the table not tipped
17 over, you are saying -- and without any evidence of
18 it ever being lit -- is a more likely ignition source
19 than a hot piece of metal that was found in the place
20 where the fire originated?

21 A I don't agree with what you are saying.
22 I haven't said those things.

23 Q Okay.

24 Now, Opinion B or -- I'm sorry --
25 support for Opinion B.

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1 You say:

2 "Two of those cells remained in the
3 notebook and did not initiate a fire in the
4 armoire area, where there was ample
5 lightweight fuel. The other two cells
6 found on the ground in the desk area did
7 not ignite the surrounding carpet and were
8 far away from the closet."

9 Do you see that part?

10 A I do.

11 Q Now, the carpet material, what was that
12 made out of?

13 A I don't know the specific material that
14 it was made out of.

15 Q Does carpet material typically have
16 fire retardants built into it?

17 A It can.

18 Q And have you determined whether this
19 particular carpet material had fire retardants in it?

20 A I have not, no.

21 Q And if it had fire retardants in it,
22 would that be a significant factor as to whether the
23 hot metal would likely cause it to flame up and start
24 a fire?

25 A It could impact whether it transitioned

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1 to flame emission or whether -- or how the fire would
2 propagate, yes.

3 Q And you are saying that you weren't --
4 you didn't inquire as to what kind of carpet it was
5 when you came to this conclusion?

6 That the fact that the carpet didn't
7 turn on fire was your basis for saying that the
8 ejections from the laptop couldn't have caused a fire
9 in the closet?

10 A That wasn't the full basis of my
11 opinion.

12 Q It was one of the bases under B here,
13 right?

14 A Correct. But we also don't know what
15 flame retardants may have been in the materials in
16 the closet.

17 Q Well, you looked at the materials in
18 the closet.

19 Did they look like they were flame
20 retardant?

21 A You can't observe that just based on
22 looking at things.

23 Q Well, you can base it on how much they
24 burn, though, can't you?

25 A Materials and flame retardants can

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1 still burn.

2 Q So, the fact that there are flame
3 retardants or not flame retardants in the carpet was
4 not a factor in your use of that fact that the carpet
5 didn't go on fire to support your conclusion that the
6 ejecta from the battery did not cause a fire?

7 Withdraw that question.

8 I'm sorry. That's terrible.

9 In B here you also say that the two
10 cells that were found on the ground in the desk area
11 did not ignite the carpeting and were far away from
12 the closet.

13 Do you see that?

14 A I do.

15 Q Now, when you say "the two cells," you
16 are referring to two empty cells, correct?

17 A I am referring to the two cans from the
18 cells, yes.

19 Q So, that's without the internal
20 windings of the cells, right?

21 A Correct.

22 Q And you don't know what happened to the
23 internal windings of those two empty cells that were
24 found near the desk, do you?

25 A I assume they were ejected into the

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1 room.

2 Q And some may have been ejected into the
3 closet?

4 A No.

5 As it is described in part C, the
6 armoire doors would also -- and the closet door would
7 partially block ejectiles from going into the closet.

8 Q So, how did the battery windings that
9 were found in the closet get there if the armoire
10 doors prevented it from going?

11 A I don't think anybody was present to
12 see how -- whether that was in the closet or how that
13 got into the closet. It could have gotten into the
14 closet from being ejected from a cell. It could have
15 gotten in the closet from firefighting efforts.
16 There is a variety of ways.

17 MR. SCHWARZ: Let's take a quick break.

18 I think I am done.

19 MS. WANEMAKER: Okay. Great.

20 VIDEOGRAPHER: The time is 6:08 p.m.

21 We are going off the record.

22 (Whereupon, a short break was taken)

23 VIDEOGRAPHER: The time is 6:10 p.m.

24 We are going back on the record.

25 Q I may have asked you this, and I

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1 apologize if I did, but on page 26 of your report you
2 concluded that it is likely the case that first fuel
3 for the fire was an item present in the office
4 closet.

5 Is that still your opinion?

6 A Yes.

7 Q And so, the first fuel was an item --
8 Was it on the floor in the office
9 closet, in your opinion?

10 A I don't have a specific opinion to
11 that.

12 Q But you have a definitive opinion that
13 what ignited that first fuel was not the copper
14 windings that were found on the floor of the closet?

15 A That's correct.

16 I mean, there is a number of reasons
17 that we have discussed related to that.

18 MR. SCHWARZ: That's all I have.

19 Thank you very much, Dr. Myers.

20 Looking forward to seeing you at trial.

21 THE WITNESS: Thank you.

22 VIDEOGRAPHER: The time is 6:11 p.m.

23 We are going off the record.

24 (6:11 p.m.)
25

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TIMOTHY JAMES MYERS, Ph.D., CFEI

Subscribed and sworn to before me
this ____ day of _____, 2025

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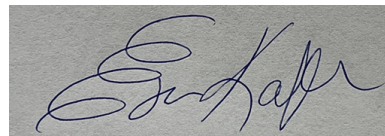
C E R T I F I C A T E

I, Eva Kaflinski, a Shorthand Reporter
and Notary Public of the State of New York,
do hereby certify:

That the witness whose examination is
hereinbefore set forth, was duly sworn, and
that such examination is a true record of
the testimony given by such witness.

I further certify that I am not related
to any of the parties to this action by
blood or marriage; and that I am in no way
interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set
my hand this 22nd day of April 2025.

A handwritten signature in dark ink, appearing to read "Eva Kaflinski", is written over a light gray rectangular background.

EVA KAFLINSKI

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Jaclyn Wanemaker, Esq., Smith Sovik Kendrick & Sugent
wanemaker@smithsovik.com

04/28/2025

RE: Marcellin v HP/StaplesCASE

04/15/2025, Timothy Myers (#7232374)

The above-referenced transcript is available for
review.

Within the applicable timeframe, the witness should
read the testimony to verify its accuracy. If there are
any changes, the witness should note those with the
reason, on the attached Errata Sheet.

The witness should sign the Acknowledgment of
Deponent and Errata and return to the deposing attorney.
Copies should be sent to all counsel, and to Veritext at
<plsteno@veritext.com>

Return completed errata within 30 days from
receipt of testimony.

If the witness fails to do so within the time
allotted, the transcript may be used as if signed.

Yours,
Veritext Legal Solutions

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Marcellin v HP/Staples

Timothy Myers (#7232374)

E R R A T A S H E E T

PAGE_____ LINE_____ CHANGE_____

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REASON_____

Timothy Myers

Date

1 Marcellin v HP/Staples

2 Timothy Myers(#7232374)

3 ACKNOWLEDGEMENT OF DEPONENT

4 I, Timothy Myers, do hereby declare that I
5 have read the foregoing transcript, I have made any
6 corrections, additions, or changes I deemed necessary as
7 noted above to be appended hereto, and that the same is
8 a true, correct and complete transcript of the testimony
9 given by me.

10
11 _____
12 Timothy Myers

_____ Date

13 *If notary is required

14 SUBSCRIBED AND SWORN TO BEFORE ME THIS

15 _____ DAY OF _____, 20____.

16
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18 _____
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New York Code

Civil Practice Law and Rules

Article 31 Disclosure, Section 3116

(a) Signing. The deposition shall be submitted to the witness for examination and shall be read to or by him or her, and any changes in form or substance which the witness desires to make shall be entered at the end of the deposition with a statement of the reasons given by the witness for making them. The deposition shall then be signed by the witness before any officer authorized to administer an oath. If the witness fails to sign and return the deposition within sixty days, it may be used as fully as though signed. No changes to the transcript may be made by the witness more than sixty days after submission to the witness for examination.

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Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

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